BUILT TO LAST

Massachusetts Department
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A Handbook on Recycling Old Buildings

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prepared by

The Massachusetts Department of Community Affairs
Office of Local Assistance

Gene Bunnell, Associate Planner

The Preservation Press
National Trust for Historic Preservation

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Designed by James R. Morrison

Cover: The Boylston Street police station (1886) in Boston, now the Institute of Contemporary Art (see page 31). (photo ©Steve Rosenthal)

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Preface

The recent reopening of Boston's Quincy Market symbolizes the vast potential now dormant in so many buildings of our older cities. Recognition of that potential has animated the reconstruction of the Boston waterfront. It has generated new interest in abandoned warehouse districts and industrial sites everywhere. And it has led a new generation of architects to take up the challenge of reworking our architectural heritage to fit the resources and needs of the present.

The conclusions of this handbook point to the critical role preservation and recycling can play in a larger urban strategy. Our nation's older cities are being given their last chance to retain what is most distinctive in their character. Here in Massachusetts these cities are not only the clearest symbol of where we as people have been, they are also our greatest challenge for the future. No government can afford to say "no" to its cities. But neither can government alone reverse the effects of poverty and neglect, of urban sprawl and middle-class flight which have become so common in the past 25 years.

Still, recognition of our urban problems does not guarantee their solution. In the fifties and sixties, redevelopment authorities in most cities subscribed to naive strategies of urban renewal. Whole blocks of old but still useful and distinctive buildings were demolished to make way for the construction of limited-access highways. These highways divided neighborhoods and made it easier to get out of a city rather than into its downtown area. The unforeseen consequences of the national highway construction program and the resulting suburban growth made it almost impossible for traditional downtown centers to compete effectively for retail activity.

But the current scarcity of public and private resources to undertake such massive renewal projects may be a blessing in disguise. People everywhere are growing more sensitive to the historical evolution and varied functions of the downtown. They are now finding that the old buildings and the abandoned industrial areas are an asset after all.

The mills, canals and rivers of Lowell and Lawrence; the historic waterfronts in New Bedford and Gloucester; the sturdy and attractive 18th and 19th-century structures of Salem, Haverhill and Newburyport: all of these historic areas are vital to the basic character of their towns. Such resources—once thought of as barriers to revitalization—now serve as key elements in new growth.

Central to the concept of changing and reusing old buildings is a change in *our* perception. We can no longer view the city center as a setting only for retail sales. To turn downtown areas into places that attract people, architects and planners must create a dynamic mix of activities within a small area—including places for living, working, shopping, eating, learning and relaxing.

The old buildings of our city centers are a rare and valuable resource. Once they are gone, they are gone forever. Our opportunity to preserve and reuse our architectural heritage is unique. We must seize the opportunity while we still have it.

Michael S. Dukakis, governor
Commonwealth of Massachusetts

Foreword

"When we build, let us think that we build for ever." John Ruskin, *The Seven Lamps of Architecture*

Buildings that have outlived their usefulness, perhaps fallen into disrepair or disfavor, exist in every community in the United States. In the past, the question, "What should we do with such buildings?" had a stock answer: Tear them down to make room for a parking lot, a new building—or nothing at all.

For many years there were those who questioned the stock answer. They were particularly vocal in the defense of "important" buildings associated with historic events or famous people. These were the earliest preservationists. In time they found allies among people who appreciated notable architecture for its own sake.

In recent years conservationists and preservationists have joined ranks, with their object the total environment and with the knowledge that *all* the nation's resources, built as well as natural, are limited. Conservationists helped make preservationists aware that we cannot go on forever depleting America's built resources by using them for a few decades and then discarding them to the wrecking ball and junk heap. Social scientists and urban planners began to show interest in preservation, too, as studies appeared showing that people feel more settled, more at home, in stable communities that respect the past and use old, familiar buildings.

Today those who struggle to save old buildings from decay and demolition include planners, public officials and private real estate developers and financiers. They have come to realize that with the rising cost of new construction and materials, old buildings are attractive investments in the future. Perhaps more than any other single factor, the economic advantages of reusing buildings are turning a tide in the thinking about the built environment.

The National Trust for Historic Preservation has watched the preservation movement grow rapidly since the organization was chartered by Congress in 1949. Each new argument for saving buildings—historical association, architectural merit, aesthetic appeal, neighborhood stability, conservation of energy and resources, economic advantage—has brought new believers in preservation. With them have come government and private programs to rehabilitate neighborhoods, downtowns, rural structures, houses, churches, schools, factories, railroad stations, theaters and virtually every other type of structure.

The National Trust is pleased to be able to publish this book to show through varied examples how one state has utilized a combination of private investment, public money, tax incentives and professional guidance to preserve elements from its past. Although the state is one of the oldest in the nation, the vast majority of the examples here involve neither colonial buildings nor those of the "George Washington slept here" variety. Some of them could be described as quite ordinary structures, even of designs currently out of vogue. They could, in fact, exist in any community in or out of New England—and they do. People need only to look with awareness to find similar examples in their own communities. As in Massachusetts, some can be revitalized for continuation of their original use; others can be imaginatively recycled for new uses. They can once again "pay their own way," serve local needs and contribute to the welfare and cultural vitality of their communities. The key to such preservation successes is imagination. Asking the question, "What could this building become?" may reveal more possibilities than, "What has this building been?"

It is this type of vision that the National Trust encourages throughout the nation. While "recycling" is the end result of preservation, the National Trust puts a special emphasis on *historic* preservation. The difference is how a building is preserved. Stripping an old building of its exterior architectural detail, gutting its interior of irreplaceable design elements, covering original materials with "modern" construction are not the aims of historic preservation. Rather, the National Trust seeks to convince developers, financiers and building owners that properties can have new lives without giving up their old—and significant—identities. To this end, the National Trust publishes information about preservation methods and successes. Through property ownership and management it demonstrates innovative as well as time-tested preservation techniques. By providing person-to-person advice it helps solve preservation problems. In cooperation with news and information media it distributes the latest developments in the preservation field. It coordinates the efforts of far-flung groups and serves as an information clearinghouse between public bodies and private groups. Offices serving the six major regions of the nation bring the services of the Washington, D.C., headquarters closer to preservationists in each state. When common preservation problems are identified, special projects are initiated to tackle them.

In one of the cases cited in this book, city planners in Salem, Mass., received a $2,500 grant from the National Trust in July 1976 to aid in planning for the revitalization of the Heritage Plaza West area. Additional help and advice came from the New England Field Service Office of the National Trust, jointly sponsored with the Society for the Preservation of New England Antiquities.

Aesthetics of old buildings are not being overlooked. The business community, having found that people like old architecture inside and out, is now exposing and promoting old buildings instead of covering them up with "modern" facades or defacing them with inappropriate plastic, aluminum and neon-filled glass tubes. In Chillicothe, Ohio, business people, aided by a small grant from the National Trust in 1970, took advantage of their architecturally unified Water Street by removing the sundry signs, false fronts and other design fads of the fifties and sixties. With minimal investment they rediscovered their town's architectural heritage and began a new era of healthy economics with appealing stores that attract tourists as well as area shoppers.

New construction has been influenced by these preservation trends. Architects are becoming increasingly sensitive to the surroundings of their projects, designing them to harmonize with existing structures while at the same time making exciting contemporary statements.

Individuals are getting the message, too. In more and more cities, old downtown residential neighborhoods are the "hot" buys, not only as sound investments but also as convenient and attractive places to live. The Mount Auburn Good Housing Association has helped rehabilitate dozens of old run-down houses for the residents of that Cincinnati neighborhood, most of whom are blacks. In San Francisco old houses in many areas are snapped up as soon as they come on the market. Preservation groups in several cities have waiting lists of prospective buyers anxious to move back into town and restore brownstones, cottages, rowhouses and other old dwellings.

Preservation has become accepted as progress in the development of America. *Built to Last* not only describes buildings of the past, it can prescribe their future, too.

James Biddle, president
National Trust for Historic
Preservation

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Victor N. Claman was director of the state Office of Local Assistance at the critical point when work on this book began. His recognition of the importance of building reuse to Massachusetts gave impetus to the work that has culminated in this book. The author is equally indebted to Constantine Yankopoulos, chief planner, who coordinates the office's technical assistance staff and who also contributed greatly to making assistance on building reuse issues an integral part of the overall program of community planning services.

Stephen Demos, chief architect, deserves considerable credit for the Department of Community Affairs' present encouragement of adaptive use of old buildings. In fact, four of the projects referred to in this book (the Stackpole Mill, the Stoughton Shoe Factory, the Seeglitz School and St. Ann's Convent in Cambridge—all renovated and converted to housing) are to a large extent the product of his efforts.

The Department of Community Affairs is especially grateful for the help of the National Trust for Historic Preservation and its Preservation Press, which is publishing this material as part of continuing Trust efforts to increase public awareness and understanding of preservation. Among those who helped produce this book are Diane Maddex, director of planning; Jennie B. Bull, associate editor; Tom Donia, staff writer, and Karen J. Zaengle, secretary, Preservation Press; William B. Hart, Jr., director of advisory services; April M. Hockett, assistant for information services, and Michael Leventhal, special program coordinator, Office of Preservation Services; Bruce MacDougal, former director, and Kathryn Welch, director, New England Field Service Office.

This book, however, could not have been prepared without the generous cooperation of many people who gave freely of their time and who made available the factual material on which these case examples are based. Members of the architecture and development firms whose projects were studied were particularly helpful, but because these firms are acknowledged in the case studies space precludes their mention here. In addition, and at the risk of not being able to thank every person individually who assisted in the preparation of this book, the author would nonetheless like to mention the following people who were particularly helpful and gracious in their cooperation: Heath Aldridge, preservation planner, Salem; Richard Armstrong, The Cheswick Center; Ronald G. Baldinelli, Sentry Insurance Company; Mary Ann Beinecke, Hoosuck Community Resources Corporation; John F. Bradshaw, executive director, Newburyport Redevelopment Authority; Albert Calderelli, East Boston Community Development Corporation; Luke Cohen, Boston Architectural Team; Joy Conway, Massachusetts Housing Finance Agency; Richard P. Courchesne, president, Old Holyoke Development Corporation; Alan B. Dolmatch, Arrowstreet, Inc.; Daniel Driscoll, Cambridge Redevelopment Authority; Virginia Enos, Taylor, Woodrow, Blitman Construction Corporation; Frank Garretson, planner, Fitchburg; Deborah Gott-Lin, Boston Redevelopment Authority; Robert Gunderson, legal and development consultant, Wellington-Harrington Development Corporation; Edward M. Healy, Healy, Healy and Dixon; Hendrik S. Holmes; Peter Homans, *Salem Evening News*; Wendy Hopkins, Hoosuck Community Resources Corporation; Pat Horenstein, Carabetta Enterprises; F. Tenney Lantz, New Bedford Office of Historic Preservation; Peter Lawrence, consultant, Office for Special Programs, Harvard Graduate School of Design; Margaret Nelson, Essex Institute; Irene Norton, Essex Institute; Kirk Noyes, executive director, Gloucester Development Team; Albert G. Olsen; Robert Scagliotti, architect, Salem; Lydia H. Schmidt, Ellis Memorial Community Center; Peter H. Smith, Childs, Bertman, Tseckares Associates; Stanley Smith, Society for the Preservation of New England Antiquities; Charles Sullivan, Cambridge Historical Commission; William J. Tinti, city solicitor, Salem; E. Denis Walsh, Schocket/Whitinsville Associates; Richard White, architect-planner, consultant to Boston Public Facilities Department; Peter Wilde, Urban Dynamics Associates; Harold O. Wilson, executive director, Rural Housing Improvement Corporation; Leigh S. Woodward, New England Architectural Services.

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Gene Bunnell, associate planner
Office of Local Assistance
Massachusetts Department of
Community Affairs

Once upon a time, buildings were built to last. The old New England proverb, "Use it up, wear it out, make it do, or do without" applied to buildings as much as to other scarce resources. But somewhere along the way the idea took hold that America's architecture was a commodity that could and should be shed as quickly as clothes to meet current fashions.

This book has been written to encourage the reuse of old buildings that were built to last. It was prepared for use by a widely divergent audience, including people who have had no previous experience in architecture or development. It is hoped that this publication will be especially useful to public officials—mayors, council members, selectmen, planning board members, town administrators, members of school committees, building inspectors, departments of public works and others who can play essential roles in the renovation and reuse of existing structures.

All too frequently, local leaders, planners, developers and citizens view old buildings as obstacles to sound growth and development—as factors contributing to economic stagnation and decline. This view is often so deeply ingrained that old buildings seem to be viewed as if they themselves were the root cause of a community's problems, problems that would disappear if only the old buildings were cleared away. When confronting the task of redevelopment, local officials over and over again seem predisposed toward strategies involving clearance and new construction. In fact, cities often offer disproportionate tax, zoning and code incentives for new construction. Rarely are plans for renewal shaped or influenced by analyses of the structural soundness of individual buildings, or even by investigations of the feasibility of renovation and reuse. Most people seem to make judgments based on how a building looks. If an old building looks bad, it must *be* bad, they think. If portions of a building

The Goult-Pickman House (1638), home of the Salem Witch Museum, next to a new apartment building in Salem. (Lawrence Lowry)

Interior of a coal bunker on the Boston waterfront that is being considered for conversion to a municipal fire station. (©Randolph Langenbach)

show signs of decay, then the building as a whole must be structurally unsound.

Notwithstanding this all-too-common prejudice against old buildings, rehabilitation and adaptive use projects are being undertaken with increasing frequency because they make good social and economic sense. Recycling old buildings allows new needs to be met with a minimum of disruption to a community and is often much more economical, or more marketable, than new construction. Moreover, it is becoming obvious to local governments that rehabilitation is not only compatible with sound community planning, it is in fact essential to achieving sensibly controlled growth. These advantages of renovating and reusing old buildings apply not only to historically and architecturally distinctive structures; more commonplace types of old buildings also possess architectural integrity and appropriateness to their settings and can lend themselves gracefully to new uses.

Advantages of Reusing Old Buildings

One of the obvious motives for reusing old buildings is that they physically link us to our past; they have become a part of our cultural heritage and their preservation is necessary to maintain a sense of place in an increasingly mass-produced society. Many old buildings deserve preservation because of their architectural beauty and the character and scale they add to the built environment. Their retention also helps to conserve that environment by recycling irreplaceable resources. Preservation of old buildings in and of itself fulfills basic cultural and social needs.

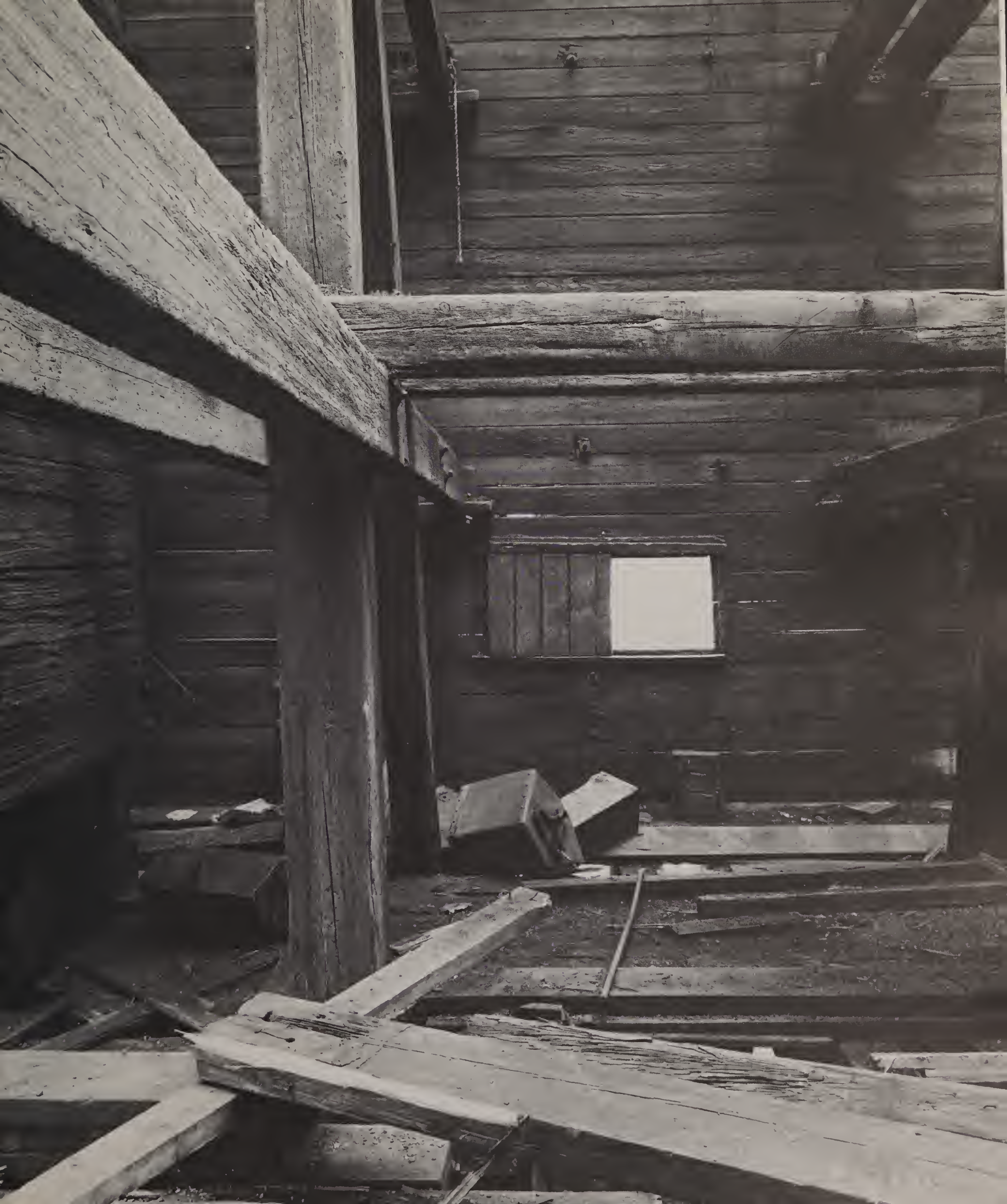
Perhaps the simplest and most compelling reason for adapting old buildings is that there are so many of them. As one of the oldest states in the country, Massachusetts, for example, has old buildings of all kinds and descriptions. These structures are a valuable resource, a kind of raw material. Massachusetts also has thousands of unemployed people, a sizable proportion of whom have skills relevant to the building industry. Renovation of old buildings is labor-intensive; for a given expenditure of money, rehabilitation creates two to five times as many jobs as new construction.[1] The potential for utilization of this human resource is enhanced by the fact that the greatest concentrations of the unemployed tend to coincide with the greatest concentrations of old buildings. Given this overlap, policies favoring rehabilitation are likely to benefit areas most in need of new jobs.

The need for rehabilitation is especially acute in the housing sector. Hundreds of badly needed housing units in Massachusetts are being lost each year through misguided local policies, apathy and neglect. This loss comes at a time when demand for housing is increasing and when the housing industry has not been able to meet this demand through new construction. Even if sufficient numbers of new housing units could be constructed each year, the increased cost of new construction has made most new units too expensive for the average family or household. Most new single-family homes sold in 1976 for more than $43,000 and rising interest rates and building costs are likely to push the average purchase price even higher. The cost of new multifamily housing also is increasing; typical two-bedroom apartments in 1976 cost $30,000 or more to construct. This cost, too, will undoubtedly continue to rise. The clear need, therefore, is to maintain the housing units that now exist and to find ways to provide new housing that is either better or less expensive (or both) than what might be obtained through new construction. Even in cases where rehabilitation is as costly as new construction, the space gained through rehabilitation is often greater or in other respects superior to what might be obtained through new construction. Newly constructed apartment units are frequently 33 to 50 percent smaller than rehabilitated units or space in other types of buildings converted to residential use. Thus, even when the total cost *per unit* may be similar for rehabilitation and new construction, the cost *per square foot* of rehabilitation may be much less.

Important to community growth is the fact that reusing old buildings also can promote new industry and commercial activity. A surplus of unused and structurally sound buildings, such as vacant mills and factories, can be turned into a major opportunity to attract business through the availability of inexpensive commercial and industrial space.

Why is it that reusing existing buildings—even those that have extensively deteriorated—is often more advantageous economically than constructing new buildings? There are many contributing reasons:

1. **Rehabilitation is labor-intensive and thus is not as influenced by skyrocketing costs of building materials for new construction.** The major cost of new construction is accounted for by building materials, and these



Demolition in 1975 of the First Parish Unitarian Church, Watertown, for a drive-in banking window. (Ken Hird)

Tower of Durfee Mills, Fall River. (©Randolph Langenbach)

materials (such as steel, copper and wood) have risen sharply in price. Costs of labor have increased in recent years, but not as steeply as building materials.

2. **Maintaining an existing building saves the increasingly high cost of purchasing undeveloped land.** In the past, when suburban land was relatively inexpensive, new construction was often advantageous simply because of the cheapness of the land itself. The advantage of building in outlying areas is diminishing, however; the cost of land in many developing, and even undeveloped, areas is rising at an even faster rate than the cost of building materials.[2] Given this dramatic upward trend in land costs, which is unlikely to reverse itself, there will be less reason to build new buildings on vacant land than to renovate existing structures in already built-up areas.

3. **Reusing an old building saves demolition costs.** Although an obvious consideration, demolition is one of the most frequently overlooked expenses of new construction and can run as high as five to ten percent or more of total construction cost. Demolition in dense urban areas (where building and safety regulations may prohibit the use of a swinging ball or other more efficient demolition techniques) can be especially expensive and time-consuming. Under these circumstances, buildings must be dismantled piece by piece, which can be quite costly. Another consideration is that the Tax Reform Act of 1976 disallows any tax deduction previously available for the cost of demolishing certain buildings that have been designated as having historical or architectural value. As more and more communities inventory and document their building stock and complete the process of designating deserving properties for inclusion in the National Register of Historic Places, the importance of this new federal tax provision will increase. In the future more developers will find that they will have to bear the full cost of demolishing an existing building, without benefit of any public subsidy.

4. **People are often willing to pay competitive rental rates in renovated old buildings.** The intrinsic character of old buildings, produced in part by age and craftsmanship, offers a quality rarely obtained through new construction. Amenities frequently associated with rehabilitated buildings include high ceilings, large windows, ornamental woodwork and hardware, wainscoting, larger-than-average closet and storage space and dramatic public spaces. These sometimes visible, sometimes intangible qualities, if recognized by a potential developer or investor, can be important ingredients in an economically feasible development project—improving the marketability of rentable space, attracting customers to commercial establishments and in some cases even translating into an increased profit margin.

5. **Renovation of existing buildings can take less time than new construction and can take place in stages.** The total amount of construction time required to renovate an existing building is generally less than the time required to construct a comparable amount of floor space in an entirely new building. Many of the major renovations described in this book were completed in less than a year—some in as little as eight months. By way of contrast, recent experience in Massachusetts shows that it frequently takes up to two years or more to complete major new construction projects. Renovation also can take place year round. A contractor, for example, can work inside during winter months, protected from harsh winter elements that would impede outdoor work on new construction sites. Obviously, a contractor undertaking a renovation need not wait until spring to dig a foundation and start work.

A related advantage of reusing

FAYETTE SPORTS

The Institute of Contemporary Art, converted from a 19th-century police station, Boston. (©Steve Rosenthal)

existing buildings is that one portion of a building can be rehabilitated and occupied before work is completed or even started on another portion. The consequent ability to rent out part of a building has a definite advantage for private developers doing renovation work because it provides a source of income when it is needed most. With new construction, a developer is generally unable to lease space until virtually the entire project is completed. As interest rates climb higher, and as the overall time required to construct new buildings is prolonged by delays in the availability and shipment of needed building materials, this time lag between construction and rental will become an increasingly serious cost factor.

6. **Old buildings often can be acquired for a very low price.** The superficial decay and poor exterior appearance of many neglected old buildings can deceive people (including knowledgeable realtors) into believing that the buildings are not structurally sound—and therefore not worth saving. A perceptive developer can often obtain an old building that no one else wants for an exceedingly low price and then transform it into a building that is as good as or better than new.

7. **Renovation can provide tax advantages.** Tax provisions recently enacted in several states and municipalities provide incentives for rehabilitating historic structures. Basing tax assessments on present value (instead of on a property's "highest and best" use), formal agreements with owners that freeze assessed valuation at pre-renovation levels for a period of years (to avoid penalizing them for making major investments in properties), or even outright forgiveness or deferral of taxes are a few of the techniques being utilized. On the federal level, the Tax Reform Act of 1976 corrects previous inequities in tax policy that tended to give unfair advantage to new construction over renovation. Now, for example, new construction on the site of a razed certified historic structure is no longer eligible for accelerated depreciation. As mentioned previously, tax deductions formerly allowable for the costs of demolishing designated historic buildings are no longer available. In addition to removing this incentive to demolition, the new tax laws give positive inducement to substantial certified rehabilitation projects for some designated historic structures, which may now qualify, for the first time, for accelerated depreciation instead of the straight-line depreciation previously imposed. In some instances, rehabilitation costs may be amortized over five years for certified historic structures.[3]

8. **Increased federal, state and local funds are available for rehabilitation.** The National Historic Preservation Act of 1966 established matching grants-in-aid, obtained through state historic preservation offices, that can be used for the acquisition and restoration of properties listed in the National Register of Historic Places.[4] Similarly, community development block grants provided to municipalities by the U.S. Department of Housing and Urban Development are a major source of federal funds for neighborhood preservation projects, as are a variety of other HUD programs. Far from representing a passing fad, national programs for housing and building conservation are becoming firmly established, and funds for such programs are expected to in-

One Winthrop Square, Boston, with a park constructed by the city. (Childs, Bertman, Tseckares Associates, Inc.)

Overleaf: The factories of Lawrence and the canals that provided them power. (©Randolph Langenbach)

crease. At the state level, grants-in-aid and tax incentives are being used to encourage building reuse and community conservation. Moreover, after more than two and a half decades of subsidizing outward growth and new development on the urban fringe at the expense of established urban centers, funding at the local level for neighborhood conservation and downtown revitalization is finally being recognized as an essential component of many municipal budgets.[5]

9. **Rehabilitation imposes fewer public and social costs than new construction.** Maintenance and reuse of existing structures can help communities avoid the trauma caused by dilapidation, abandonment and clearance—a sequence that has needlessly victimized many neighborhoods and commercial areas. This sequence has had high social costs in dislocation of residents, economic decline and disruption of community life. In addition, because old buildings are usually located in portions of communities that have already been fully developed—and are already served by sewer and water lines, roads, schools and fire stations—renovation and adaptive use of old structures can relieve municipalities of the necessity of making additional expenditures for costly new public facilities. Many cities and towns have suffered financially by having to continually extend municipal services to outlying areas while structures in previously developed areas, already served by public services and facilities, have been abandoned. An obvious related public benefit is that a policy of rehabilitation reduces urban sprawl and helps to avoid a needless loss of increasingly scarce unspoiled open space.

By concentrating municipal capital expenditures in developed areas and encouraging and rewarding reinvestment in existing buildings, a community need not forego the opportunity to strengthen and even increase its tax base. In many communities, especially those characterized by moderate growth, the added tax base contributed by new construction may be more than offset by declines in the value and occupancy of existing buildings. The soundness of a community's tax base is determined as much by the quality, repair and use of its old buildings as by the amount of new construction generated. Rehabilitation projects can be successful in creating direct economic benefits to communities: attracting new residents and holding old ones, increasing tourist interest, bringing in new businesses and industry and making downtown areas attractive places in which to dine, see a movie or simply take a stroll on a summer evening.

10. **Reusing old buildings conserves energy.** Old buildings represent an investment that it would be foolish to squander—an investment of energy and labor made at a time when costs were significantly lower. Demolition of these buildings requires new expenditures of energy, and their replacement even more to produce the new building materials and to assemble them on a cleared site.

Moreover, as New York architect Hugh Hardy points out, "Many contemporary structures which appear so sleek and modern are, in fact, 'primeval monsters' both in terms of the energy consumed to build them and the energy required to make them habitable."[6] The thick masonry walls of many old buildings retain heat much more effectively than the glass and steel used in newer structures. In certain cases, the tall windows of old buildings (which open, unlike those in so many new buildings) and high ceilings may provide so much natural ventilation and sunlight that total expenditures required for lighting, mechanical ventilation and air-conditioning systems may be reduced.

As supplies of nonrenewable resources are depleted, and as the costs of remaining resources increase, the conservation of all energy-related resources will become an even greater national concern. Clearly, the energy conservation arguments for reusing old buildings should grow stronger with each passing year.

Case Studies in Reuse

Proof of the feasibility of recycling old buildings can be found in examples already carried out. The primary focus of this handbook is thus the presentation of examples of buildings that have been, or are being, successfully rehabilitated for continued or new uses.

The book is organized into seven basic sections, six dealing with major building types based on original use: public, commercial, industrial, residential, institutional and educational. A final section focuses on community renewal. Each section includes an introduction and several detailed examples of buildings of that type that have been renovated for different purposes. Briefer examples of other reuse projects reinforce the fact that renovation is not isolated but can be replicated in numerous other instances. Case studies in each section have been selected to include varied types of buildings in each category,

varied new uses, different financing mechanisms, different types of developers and different governmental roles. Each major case example includes key facts: location, what the building was (and its construction date and architect, if known), what it has become, who developed it and who the architect and contractor were,[7] how much it cost, the total floor area, how it was financed and the construction schedule. This format should facilitate comparisons among case studies as well as with other projects not included in this report.

To provide the most meaningful information on the costs of the various projects, an effort has been made wherever possible to provide the reader with both the construction cost of the renovation and the total development cost. The distinction between these two cost figures is an important one. *Construction cost* reflects only the cost directly attributable to the physical renovation and reconstruction of a building (i.e., the cost of building materials and labor). The construction cost of a project does not include or reflect other important costs associated with a particular development, such as the cost of acquiring the building, architects' fees,[8] permits, insurance while the building is under renovation and interest charges. Thus, when available, the *total development cost* of a project is also provided to show all relevant costs associated with the project from beginning to end.

The majority of the cases in this book deal with adaptive use, the conversion of old structures to uses different from the ones for which they were originally built. Just as important, however, is the obvious need to maintain and modernize old buildings so that they can continue to perform their original functions. For this reason some examples of rehabilitation for continued use are also presented.

Although an attempt has been made to provide a full range of examples, this survey certainly is not exhaustive in its coverage. Examples of buildings that have been put to new uses can be found in practically every community regardless of size. There is nothing magical about reusing and converting old buildings; it is, or should be, a common and integral part of every community's growth and vitality.

Among the reuse projects contained in this book, some have proven to be more successful than others. In fact, one or two of the examples may even have failed in certain respects, or suffered financial problems that can plague any new development. Projects have been included not because they are perfect—examples of excellence to be appreciated for all time—but because they illustrate important and useful principles of reuse applicable to other projects. What constitutes "success" in reusing buildings may very well change over time. Indeed, if there is one major lesson to be learned from this book it is that buildings may not be success-

Windsor Mill, North Adams, being converted to an environmental arts center as part of a community revitalization effort. (©Randolph Langenbach) ful in one form forever and can and should change in response to the dynamic quality of our communities.

Massachusetts Housing Finance Agency

A large number of the housing rehabilitation projects described in this book were financed through the Massachusetts Housing Finance Agency, a semi-autonomous state agency. MHFA was established by legislation in 1966, but was not funded until 1968, when a $300,000 loan was appropriated to pay the expenses of the agency until it could begin its self-supporting lending activities. Construction of the first MHFA-financed housing began in January 1970. William F. White directed the agency from its inception until April 1977, when he was named General Manager, New Communities Development Corporation, HUD.

The principal purpose of MHFA is to facilitate the creation of rental housing by granting mortgage loans to nonprofit and limited-dividend developers. In this regard, MHFA functions much like a bank, but with the requirement that at least 25 percent of the apartments financed by the agency in any single development must be available at reduced rents to low-income people and households. The mixed-income aspect of MHFA housing has been an important and successful element in the state's overall housing program, providing an opportunity for low-income persons to live not only in decent housing but also in a mixed community of people representing different economic and social groups. MHFA financing also has allowed for the construction of mixed-income housing in suburban communities where previously there had been little or no subsidized rental housing available to persons with low incomes. Overall, 38 percent of the apartment units financed by MHFA are occupied by low-income persons and 50 percent by persons of moderate incomes. Twelve percent of MHFA-financed apartments are occupied by upper-income residents who pay the full market rent.

As of June 30, 1976, MHFA had closed 221 loans to finance construction or renovation of 31,199 residential apartments, distributed among 67 Massachusetts cities and towns. These loans represent a capital investment of more than $760 million. Contributing to the acceptance of MHFA mixed-income housing has been the agency's commitment to high standards in the design, construction and management of the developments it finances. This commitment to excellence has been especially evident in the agency's substantial financial investment in residential rehabilitation and the conversion of abandoned nonresidential structures to housing. Indeed, MHFA deserves recognition for its pioneering efforts in this important aspect of providing and maintaining needed housing; it made loans for adaptive use at a time when such projects would have encountered difficulty in obtaining financing from private banking institutions. By making these loans, MHFA has blazed a trail that now others can follow and has achieved an impressive series of successes in building reuse that demonstrates the long-term feasibility of this approach.

Chapter 121A Tax Agreements

Some case studies included here were implemented under Chapter 121A, a special property tax provision of the Massachusetts General Laws. Chapter 121A was created by the Massachusetts legislature in the late 1950s to facilitate construction of the Prudential Center complex in Boston, but it has been used with increasing frequency in recent years to encourage both new construction and renovation in blighted areas. An urban redevelopment corporation must be formed as the authorized agent for a 121A project, and the project must be approved by the community as well as by the Massachusetts Department of Community Affairs. Perhaps the most important feature of Chapter 121A is that it allows a development to obtain a long-term tax agreement as an alternative to the conventional property taxes that otherwise might have been levied on the project's total assessed valuation. Under the agreement, the developer agrees to pay an excise tax based on a fixed percentage of the development's rent roll for a given year. This fixed percentage is decided through negotiation between the developer and the community.

The most important advantage of a 121A tax agreement to a potential developer, in addition to possibly reducing the total amount of taxes to be paid, is that future taxes on the project are predictable. Indeed, the unpredictability of property taxes from year to year due to periodic reassessments and sometimes abrupt changes in tax rates is a major barrier to new investment—and often causes private lending institutions to deny any permanent financing for otherwise financially sound development projects. The length of a 121A tax agreement varies from project to project. Projects involving the creation of low and moderate-income housing, if approved, can qualify for the maximum 40-year tax agreement; market rental housing developments approved under Chapter 121A are able to qualify for a 15-year tax agreement, with opportunities for increasing the length of the agreement if specified amenities are provided. Developers approved for 121A tax agreements are limited to an 8 percent return on their investment.

The process of qualifying for a 121A tax agreement is rigorous. The developer is required to provide lengthy documentation and descriptions of the proposed project, and there is a prescribed sequence of review by all relevant local governmental bodies, including public hearings. Thus, the advantage of the Chapter 121A process to a community is that it provides an important avenue for public review of a proposed development and allows a community the opportunity to have constructive input into its planning and design. Through the 121A process, the community receives important assurances as to how the project will be implemented (this scrutiny is valuable in screening out "fly-by-night" developers), thereby helping to achieve a compatible and well designed type of development.

The Massachusetts Department of Community Affairs is empowered to give final approval to all 121A tax agreements; projects in Boston are approved instead by the Boston Redevelopment Authority. The vast majority of 121A agreements approved outside Boston have been for projects involving the construction or renovation of low and moderate-income housing. Within the city of Boston 121A agreements approved by BRA have covered a more varied array of projects, including many commercial ones such as the construction of new highrise office buildings.

Recent changes in the rules and regulations governing the use of Chapter 121A have been developed by the Department of Community Affairs so that its provisions can apply to large-scale urban redevelopment projects and projects containing mixed uses throughout the state. Clearly, Chapter 121A is a highly flexible and influential tool, capable of shaping private investment decisions. The fact that so many of the reuse projects in this book were undertaken under this provision indicates that for Massachusetts it has been an important encouragement for adaptive use of existing buildings.

Recycling Within the Building Codes

A number of architects and developers interviewed in connection with this book mentioned that some of their renovation projects could not have been carried out under the new Massachusetts State Building Code adopted in 1975. They voiced concern that standards set in the new code may be biased in favor of new construction, setting requirements inimical to rehabilitation and therefore discouraging investment in old buildings.[9] In many instances it may be physically impossible or prohibitively expensive to bring precode buildings into total conformance with the new code. The unintended result may be that many old buildings will receive only minimal maintenance, rather than a major investment in rehabilitation that would not only renew them but also make them healthier and safer for their occupants. In this sense then, some of the standards in the building code may be self-defeating, actually encouraging the persistence of unsafe conditions—through decay and disinvestment—in a substantial portion of the building stock. This complicated and controversial issue, because of its technical nature, is difficult to discuss in general terms. However, one of the major questions that must be addressed is whether or not the standards set in building codes in general encourage or prohibit substantial improvements to existing buildings.

Continuing efforts are being made by many building code officials at state, local and national levels (see Appendix A) to modify provisions that needlessly inhibit substantial improvements to existing buildings. Efforts are also being made to educate local building inspectors and architects about key code provisions as they apply to existing buildings and the procedure for appealing specific decisions. Those who have experience in preserving and rehabilitating old buildings are confident that continued modifications to the building codes, and reasonable interpretations of the codes at the local level, can result in renovated buildings that are not only a benefit to the community, but also as safe and secure as buildings can be.

Built to Last in Any Community

For purely practical reasons, this book limits itself to examples in Massachusetts as of January 1977. This fact, however, does not diminish the relevance of these selected case studies for communities outside Massachusetts; conceivably, every example presented here could be replicated in any community. The applicability of a given case study to other communities was the major criterion for inclusion in this book. Because of this concern for broad transferability, some outstanding and unique examples of renovation and reuse have been omitted: the Old Boston City Hall; the Market Square Redevelopment project in downtown Newburyport; the renovations of the Commercial, Lewis and Long wharves into luxurious (and expensive) housing and commercial space; the marvelous and exciting restoration of the 150-year-old Quincy Market adjacent to Faneuil Hall and the elaborate conversion of the old Mercantile Wharf Building, overlooking a beautifully designed 4.5-acre waterfront park on the edge of Boston Harbor, into an extraordinary mixed-income housing development. Indeed, the latter two recycling projects, both of which were completed in September 1976, will undoubtedly rank in quality and commitment to excellence among the finest accomplished in this country. These particular examples have been, and will be, well documented in other publications. Such large and unique projects may not be as relevant, or potentially transferable, to the majority of communities.

An attempt has thus been made to emphasize lesser-known examples, some of which may be considered by some people to be quite ordinary buildings that might, in a traditional sense, be viewed as lacking in unique architectural or historical significance. This inclusion of somewhat commonplace examples is intended to increase the general relevance of the book and to underscore the idea that the principles and approaches described have meaning for *all* communities, regardless of the character or age of their building stock.

Perhaps the most important purpose that this book can serve is to narrow the popular distinction between historic preservation on the one hand and practical development strategies on the other and to focus attention on issues of common concern to almost all citizens—housing costs, jobs, energy conservation, cultural heritage, neighborhood stability. What is clearly needed now and in the immediate future is to build the kind of coalition of interests and constituencies that is required for renovation and reuse of old buildings to become firmly established as an integral part of the community development process. Recycling reusable old buildings is no longer the concern only of those who think of themselves as historic preservationists; it is becoming the concern of all citizens because it is essential if our communities are to be livable and prosper.

[1] Testimony of U.S. General Services Administration in support of Public Buildings Cooperative Use Act (S-865), May 19, 1975, before the U.S. Senate Subcommittee on Buildings and Grounds.

[2] William H. Whyte. *The Last Landscape* (New York: Doubleday & Company, Inc., Anchor Books, 1970).

[3] The U.S. Department of the Interior has issued proposed regulations relating to Section 2124 of the new law. "Tax Incentives to Encourage the Preservation of Historic Structures" (an explanation of Section 2124) is available from the National Register of Historic Places, National Park Service, U.S. Department of the Interior, Washington, D.C. 20240. In addition, a memorandum describing the provisions of the Tax Reform Act of 1976 that relate to the preservation of historic property and the conservation of scenic property is available from the Office of Real Estate and Legal Services, National Trust.

[4] The National Register of Historic Places is a national list of properties worthy of preservation because of their significance in American history, architecture, archaeology and culture. It includes properties of national, state and local significance, and listing is a prerequisite for obtaining National Park Service grants-in-aid. The Advisory Council on Historic Preservation must have the opportunity to comment on any undertaking that may affect a listed property (or one eligible for listing based on statewide surveys) if it includes funding, licensing or execution by a federal agency.

[5] See Appendix A, Preservation Resources, for details on these programs.

[6] Nancy Iran Phillips. "Inner-City Buildings: A National Resource Ready for Re-Use," *Christian Science Monitor*, April 4, 1975.

[7] Using and renovating old buildings is a special area of expertise, requiring new approaches and skills that are often more demanding than those required for new construction. Therefore, the developers, architects and contractors who are responsible for the successful examples of reuse included in this handbook have been credited for their work.

[8] Roger Lang of Stahl/Bennett, Inc. (now Perry, Dean, Stahl and Rogers, Inc.), has pointed out that a standard fee for design professionals based on a straight percentage of construction cost is probably inappropriate for many renovation projects. Lang notes that renovation can be extremely time-consuming for a design professional and that increased commitments of time to a renovation project are frequently reflected in decreased overall project costs. Thus, professional fees should more properly be based on time expended rather than on construction value.

[9] Under present guidelines in Massachusetts, if the cost of improving an old building exceeds more than half its previous value, then that structure must conform in all respects to the new building code. What constitutes "value" is left open to interpretation. If replacement value is used as the criterion—rather than present market value or assessed value—it is possible that many major renovations of old buildings could be allowed without necessarily complying in all respects with the present building code. An amendment to the state building code proposed by Gov. Michael Dukakis in April 1977 would exempt small-scale rehabilitation projects from many code provisions and would require full compliance only when rehabilitation costs are more than two-thirds the replacement value of the building.

Coal bunker on the Boston waterfront. (©Randolph Langenbach)

How communities treat their public buildings is one way of signifying their willingness to support the renovation and reuse of existing buildings by the private sector. Some communities decide to abandon an old building only after much soul-searching and only after a thorough examination of the advantages and disadvantages of renovating it to meet current and anticipated needs. Other communities, at the first sign that an existing building has shortcomings, presume that it could not possibly be altered or modified and move swiftly to replace it with an altogether new building.

Obviously, the construction of new municipal buildings often is justified and desirable, but a consistent stance in favor of new construction can indicate a predisposition against renovation. On the other hand, municipalities such as Gloucester and Needham that have retained and continue to use their landmark municipal buildings also tend to sympathetically encourage reuse such as conversion of vacant school buildings for housing. Old municipal buildings stand as symbols of community stability and as reminders to public officials, citizens and developers that old buildings can still meet current needs and are worthy of retention and reuse.

In Boston, a unique reuse plan for recycling an old coal bunker and converting it into a municipal fire station has been prepared by Anderson Notter Associates. The coal bunker, built around 1900 and used to store coal for a nearby power generating plant, had been phased out when the plant switched from coal to oil. The cost of converting the coal bunker is estimated to be comparable to that of building a new fire station. However, a key element in the reuse concept is the possibility that the city could lease 15,000 square feet of space in the converted structure to commercial tenants, thereby recouping some of the cost.

Whether or not the proposed reuse plan will be implemented is uncertain, although this uncertainty has nothing to do with the feasibility of the proposed conversion. For one thing, the city is faced with a high interest rate on bonds it issues and is therefore reluctant to undertake new public facility projects. Whether or not the coal bunker is eventually used for a municipal fire station, the fact remains that plans have been prepared showing that it can be done. This proposal is one more example of how municipal structures of all kinds and descriptions offer innumerable possibilities for reuse. "This coal bin," said William Marlin, architecture critic for the *Christian Science Monitor*, "is a reminder that one of the most old-fashioned, outmoded notions around is that knocking down and starting from scratch is the only way to rebuild."[1]

Setting an Example

A new municipal building also can be a positive expression of civic pride—a symbol of progress and commitment to excellence. Clearly, the new Boston City Hall is such an appropriate expression. Often, however, the construction of a new municipal building merely substitutes something new for something old, perpetuating an official belief that the continued use of an old municipal building reflects poorly on a community, indicating either backwardness or local impoverishment. What has made the substitution of new for old particularly sad is that what is built is often less well constructed and of less enduring quality than the building it has replaced. A major culprit behind this decline in quality is the staggeringly high cost of new construction, which forces communities that build new municipal offices to make severe compromises in the quality of design and construction and results in new buildings that are mediocre and often not even functional. This overemphasis on saving money may encourage municipal officials to forget that sometimes the most important reason for renovation may not be cost, but rather that renovation is the best way to achieve a particular objective—a better, more enduring and aesthetically pleasing symbol of civic pride and service.

Examples of new municipal structures that failed to approach the standards of the buildings they replaced are not hard to find. Architecture writer Ada Louise Huxtable, member of the *New York Times* editorial board, soberly analyzed the new Hudson County Courthouse in Jersey City, N. J., and the one that it replaced. "The closing of the doors of the stately Hudson County Courthouse in Jersey City echoed across the country. When the judges left their marble-colonnaded courtrooms for functional modern quarters in a new building next door, they made a move that is being made, in one form or another, in almost every American city. They left behind offices of solid oak and mahogany and moved into quarters lined with flexwood.

"If county officials had deliberately placed the two buildings in their side-by-side position as an object lesson in the decline and fall of American public architecture, they could not have provided a better example. Never has the deterioration of style and standards been so clearly and devastatingly illustrated. . . .

"The materials and details of the old courthouse, according to contemporary accounts, were selected for 'grace, dignity, and vigor.' It was meant to convey 'a feeling of strength and durability.' Descriptions of the new building focus on the splendors of its heating, cooling and elevator systems. . . . The story is repeated over and over. The landmark invites the wreckers and its replacement reduces the public image to the lowest possible common denominator."[2]

The magnificent Bristol County Superior Courthouse (1894) in Taunton, whose sturdy tower rises high above the downtown, is one of the most exemplary public buildings in southeastern Massachusetts and has been threatened for a number of years. County officials had long suggested that the building be replaced by a new county courthouse, possibly in some other community. The Taunton Area Chamber of Commerce initiated a study by outside consultants, who determined that the old courthouse could and should be retained, that an addition could be constructed on the rear of the building and that adjacent parking areas could be consolidated and improved. The dominant visual qualities of Bristol's old courthouse—its impressive scale, the exquisite texture of the granite exterior, the interior embellishment and its soaring dome—proclaim the importance of government and law. With the endorsement of the county commissioners, in April 1977 the structure was nominated to the National Register of Historic Places. It now appears that the courthouse will be retained.

A less heartening story is told by Robert Campbell, architecture critic for the *Boston Globe*, who describes how the city of Laconia, N.H., decided to build a new city hall rather than renovate its old one or some other old building. Campbell suggests that the city could have converted the old Busiel Mill on the banks of the Winnipesaukee River into a municipal office building; as it turned out, that kind of reuse opportunity was pursued by private interests who beautifully converted the Busiel Mill into commercial office space.

What the city built instead, states Campbell, "is a building so banal, cheapened and stereotyped that it could be any motel, any suburban clinic anywhere in America. . . . Would anyone dream that the new building is a city hall? The only way you can possibly tell is by the sign over the entrance."

Campbell notes that the failure of Laconia to renovate an old building for its city hall reflects a general insensitivity to preserving its past. "It isn't only the city hall that shows this kind of attitude in Laconia. Right across the street, the city fathers tore down Main Street and rebuilt it as a mansard-roofed suburban shopping center, with a pedestrian mall down the middle. Surrounded by parking that cuts it off from the rest of the town and from the riverfront that gives the town so much of its character, the new mall, like the new city hall, is a little island of suburban banality in a town that once had some individuality."[3]

The lesson of the city hall in Malden, Mass., is that one of the most frequently overlooked aspects of constructing new public buildings is the responsibility for determining what to do with sound and usable buildings that are being replaced and for facilitating their reuse either directly or through private sector involvement.

In April 1975 the city of Malden opened its new city hall-government center. The new building, with more than 118,000 square feet of net usable space, represented an opportunity to bring together under one roof all governmental functions (including the Malden Redevelopment Authority and the offices of the Malden School Department). Approximately 33,000 square feet in the building are used for city government functions and another 46,000 square feet are rented to the Redevelopment Authority and the School Department. The balance of the space is occupied by federal agencies, such as the Social Security and military recruiting offices. The new government building was constructed at a cost of more than $9 million and is a dramatic example of excellence in public architecture (the architect was Doxiadis Associates, Washington, D.C.).

Not far from this imposing new city hall, the Old Malden City Hall stands vacant and neglected. The 117-year-old building was designed by John Stevens, a well-known Boston architect, and was built in 1857 on a prominent site on Main Street.

Since the city of Malden first began to plan for its new city hall, the expectation has been that demolition of the Old City Hall is necessary for downtown renewal because the old building is a "roadblock in the path of municipal progress."[4] Most frequently discussed in this connection are the tentative plans of the Malden Savings Bank to build a new addition to its building on the site. The failure of local officials and business people to consider preservation as an alternative is particularly puzzling because an independent professional feasibility study, prepared by Bastille-Neiley, Architects, Boston, has concluded that the building has significant reuse potential and could feasibly and successfully meet a strong local demand for a high-quality restaurant and drinking establishment, a bank, professional offices and possible retail space.[5] The negative local attitude toward the building is one of the major obstacles in the search for a private developer to bid on renovation as outlined in the reuse feasibility study. Especially prevalent are unsubstantiated claims that the Old Malden City Hall is structurally unsound. For example, a page one editorial in the *Malden Evening News* on November 12, 1976, referred to the building as a "prominently located mass of bricks that could conceivably collapse any day," even though a licensed structural engineer has carefully inspected the building and found it to be in excellent condition. Unfortunately, the city's negative impression of the building can eventually fulfill itself, as weeks and months of deterioration and no maintenance accumulate.

Sometimes a community is a poor judge of the worth of its own built resources, and it may take strong encouragement from the outside to change negative attitudes that have become deeply ingrained. In October 1976 the Old Malden City Hall was listed in the National Register of Historic Places—the first building in Malden to be included in the register. This designation may provide outside encouragement to the city to delay demolition and allow further time to find an interested developer. The Tax Reform Act of 1976 also helps some

National Register sites by foreclosing accelerated tax depreciation benefits to any new structure that is built on the site if the building is razed and by denying a deduction for these demolition expenses.

Although the city has moved boldly to build a dramatic new government complex, its approach to the reuse of the Old City Hall has been a relatively passive one—relying on the initiative of a group of interested citizens and preservationists to put together a plan for reuse at the eleventh hour and continuing to rely on them to find an interested developer. This passivity is difficult to explain considering the magnitude of the expenditures on the new city hall and of the past investment in the Old City Hall for construction and subsequent maintenance. There is little doubt that, with encouragement from the city, the Old Malden City Hall could be reused in much the same way as the Old Boston City Hall—contributing substantially to the revitalization of downtown Malden. Whether or not this exciting possibility will materialize, however, is very much in doubt.

Old Malden City Hall and facade detail.
(Gene Bunnell)

Hopkinton Town Hall

Location:	Main Street, Hopkinton
Former use:	Town hall, built 1902
New use:	Town hall, with new first-floor plan
Developer:	Town of Hopkinton
Planner:	Massachusetts Department of Community Affairs, Office of Local Assistance
Architect:	R. D. Fanning, Boston, architect of record
General contractor:	Students from Keefe Voctional Training School, Framingham
Construction schedule:	Begun June 1975; completed July 1976
Total floor area:	4,100 square feet (gross on first floor). Second floor unaltered
Cost:	$35,000 (primarily for building materials and equipment) $8.54/square foot (first floor)
Financing:	Town appropriations

The case of the Hopkinton Town Hall provides added proof of how inexpensively an existing building can be renovated for continued municipal use. Hopkinton is a small town (population approximately 6,000) 26 miles west of Boston. It is perhaps best known for the fact that the Boston Marathon begins at the town green each year.

Even though it is small, Hopkinton still has a need to provide municipal office space for its various departments: the assessors, town engineer, town clerk, selectmen's office, planning board, board of health, conservation commission, etc. Thus, what Hopkinton did (and did not do) is relevant to many other communities.

For a long time the people of Hopkinton and their elected representatives had been unhappy with the town hall. The interior of the building was drab and dingy, and full-time employees operated under extremely cramped conditions that made it difficult for them to function effectively. Dissatisfaction was so prevalent that town officials talked openly of the need to tear down the old building and start over.

During 1973–74 the Hopkinton planning board was working with the Massachusetts Department of Community Affairs to prepare a new comprehensive plan for the town, and the DCA planners learned that Hopkinton residents believed that they needed a new town hall. In response, the DCA staff undertook to analyze the condition of the building and the allocation of space within it and also interviewed town officials to determine how much and what kind of space they thought their respective departments needed.

From this analysis, three things were learned: (1) The old town hall contained more total floor space than even the maximum amount of space needed by town departments, assuming that a modification in the use of that space could be achieved. Although individual offices were cramped, it was only because so much of the total area was not usable (hallways and corridors) or was underutilized (rooms used inefficiently or infrequently). (2) The old town hall contained more floor space than the town could ever afford to construct in a new building. (3) The old building, although in need of painting and repointing of the brick exterior, was in good structural condition.

In analyzing the advantages and disadvantages of continuing to use the existing town hall, it became clear that its location in the town center (on

Main Street, within the commercial district, across from the town library) was an excellent one. If a new town hall were to be built, it might have to be located on a less accessible site—or the town would have to do without a town hall altogether for at least a year while the old one was demolished and a new one constructed. Another factor was finances; the median cost of constructing a town hall in 1976 was officially reported to be $39.15 a square foot.[6]

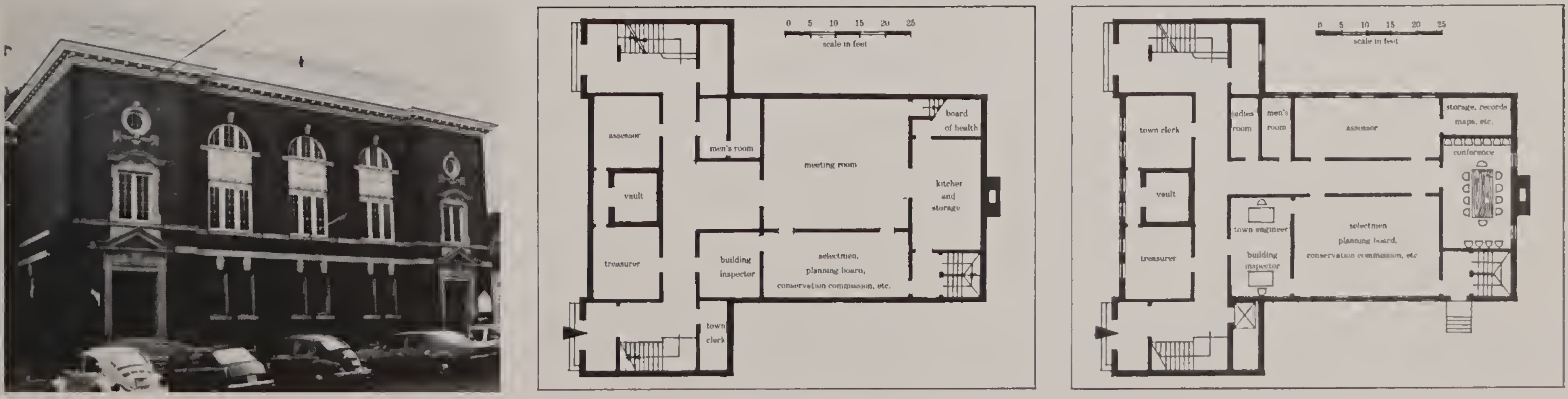
Once the decision was made to rehabilitate the old town hall, the task became to reorganize and redistribute space within the building to provide more space for those town offices that had the greatest need and to reduce the amount of poorly utilized space. The principal feature of the new floor plan prepared by DCA planners was the elimination of the central meeting room that had formerly used so much of the first floor. The elimination of the old meeting room was a reasonable solution because it was too big for meetings attended by fewer than 40 people (the vast majority of meetings held in the town hall) and was far too small for heavily attended town meetings. The original use, town meetings, had long since been transferred to the auditorium in the new high school. The elimination of this infrequently used large meeting room freed a large area to expand town offices.

Another area of underutilized space was found to be the old kitchen in the rear of the building. Years ago the kitchen was used for community suppers held in the town hall. Like the former large meeting room, the kitchen's function had long since been forgotten. Thus, this space could be converted into a moderate-sized conference-meeting room to be used for selectmen's meetings, conferences and small public meetings. Completely new electrical and heating systems were installed.

With all of these changes and improvements on the first floor, the entire second floor of the town hall remains unutilized. This space, a large hall complete with stage, balcony and high ceilings, can be converted to office use at some time in the future when the town needs the additional space. In retrospect, the sheer abundance of space in the old town hall makes it hard to understand how anyone could have considered disposing of the building.

Perhaps the most noteworthy aspect of this rather straightforward renovation was that Hopkinton accomplished it at relatively little expense by having the work done by students of the Keefe Vocational Training School in Framingham. These students, whose work was supervised as part of their formal training, did an excellent job. Because the major expense of rehabilitation is labor, not building materials, this approach resulted in substantial savings; in fact, the renovation cost the town only $35,000. When no one in the town could find the original plans for the building (a prerequisite for doing the renovation work), the town showed its resourcefulness by using high school students in an industrial arts class to measure the building and prepare a new set of drawings.

The case of the Hopkinton Town Hall illustrates that a community can believe it needs a new building simply because it is making poor use of an existing one. It also suggests that there are imaginative means that even the most financially strapped communities can use to accomplish the improvement of existing public buildings.


Hopkinton Town Hall (left), former floor plan (center) and floor plan after renovation (right). (left, Charles M. Sullivan; center and right, Manya Rege)

Stephen Palmer School

Location:	Town center, Needham
Former use:	Elementary school, built 1914
New use:	28 apartments
Developer:	Crowninshield Corporation, Peabody
Architect:	Anderson Notter Associates, Boston
General contractor:	To be selected
Construction schedule:	Begun summer 1977; completion expected February 1978
Total floor area:	33,200 square feet
Cost:	$500,000 construction estimated $17,857/unit estimated $15/square foot estimated
Financing:	Private. Proposed leasing to Crowninshield Corporation (with renovation costs included as credit against monthly rent), to revert to town after 50 years

Other school buildings are presented in the chapter, Educational Buildings (see page 97). This example is included here because of the innovative public review process used.

The town of Needham is a suburban community located approximately 15 miles west of Boston. Like other suburban communities that built new schools during the 1960s to keep pace with rising school enrollments, Needham was recently faced with the problem of what to do with a vacant old elementary school building in the center of town. Town meeting members considered whether or not to spend $40,000 to demolish the school. After lengthy discussion, they decided to postpone demolition and in the interim create a Stephen Palmer School Study Committee. The eight-member study committee was composed of a representative of the board of selectmen, the planning board, the school committee, the finance committee, the League of Women Voters, the elderly and two at-large members. The committee's charge was to investigate alternative uses for the school building and to recommend to the next town meeting in fall 1975 whether or not the building should be torn down.

The Stephen Palmer School Study Committee first met in July 1975, when an informal straw vote was taken among its members; seven of the eight members of the committee indicated that they believed the building should be demolished. This straw vote, indicating the committee's initial skepticism about prospects for reuse, is worth mentioning in light of the report the committee submitted to the town meeting four months later.

Planners from the Department of Community Affairs joined committee members for a tour of the Palmer School on July 23, 1975. This site visit and subsequent investigations confirmed that the structure was in excellent physical condition. Thereafter, the DCA planners met almost weekly with the committee to consider suitable uses for the building and to review various proposed plans and reuse designs.

Conversion of the building to commercial or professional office space, a logical use because the site is adjacent to the town business zone, was discussed. Commercial use was later rejected, however, because the committee found that there was a surplus of commercial office space in Needham and because the committee believed that commercial use might have an undesirable effect on the residential area bordering the school. Using the building for municipal offices was also considered based on a February 1975 report on the school by the Needham Planning Board. The report indicated that the building could easily be converted, that the location in the center of town was ideal and that the space would be much less expensive than similar space in a newly constructed building. However, this alternative was dropped from further consideration because the Palmer School contained more space than would have been necessary for municipal offices. (The idea of using part of the building for municipal offices and renting the rest for private professional offices might have been feasible but was not pursued.)

After lengthy consideration of potential uses, the committee concluded that the most serious needs in the town were for (1) rental housing within walking distance of stores, activities and public transportation and (2) community space for use by local voluntary organizations and groups. DCA planners proceeded to study ways these two uses could be accommodated in the building—to determine, for example, how many apartments (and what type) and how much community space might be jointly obtained. Early in that analysis it was found that the structure and organization of the building were excellent for conversion to apartments. With minimal alteration, existing classroom walls could be utilized to define residential units. The enclosed courtyard presented a major asset because it could be transformed through landscaping into a pleasant sitting area for residents. Also, the planners found that three existing staircases were not needed for residential use and could be closed and framed over, thereby increasing the amount of usable floor space in the building. Closing these stairways was desirable to control access in and out of the building and could be accomplished without in any way sacrificing safety or movement in the building.

Despite the detailed designs and plans for the building prepared by the DCA planners and their assurances that conversion of the school building to apartments and community space was feasible, committee members remained skeptical. The turning point in the committee's thinking came on October 18, 1975, when the study committee made a visit to Gloucester to inspect the newly converted Central Grammar School (see page 102). The tour of the Central Grammar School Apartments was conducted by Kirk Noyes, executive director of the team that conceived and executed the reuse of the old school building. Members of the committee were impressed by the beauty and spaciousness of the apartments in the converted school. Seeing *is* believing—and seeing the Gloucester Central Grammer School was concrete proof to the committee that converting an elementary school into housing is feasible.

The rest of the committee work was directed at refining proposed plans for the Stephen Palmer School and obtaining cost estimates. Each expert consulted by DCA (including a developer, an architectural firm and a senior financial officer of the Massachusetts Housing Finance Agency, all of whom had inspected the building) agreed that the reuse project was feasible, although cost estimates varied from $12,000 to $21,000 per unit. Basically, the differences in cost estimates reflected varying assumptions about how major the renovation would be. The high estimate was based on the cost of a "gut-rehab" (a total replacement of everything except the shell of the building, i.e., foundation, walls, floors, etc.), while the low estimate assumed that many elements in the building could be reused (existing floorboards, boiler) and that existing mechanical systems would be replaced only where necessary. Even the expert who offered the high estimate indicated that this was still $4,000 less expensive per unit than new construction. The renovated units also would be much larger than apartments in a new building.

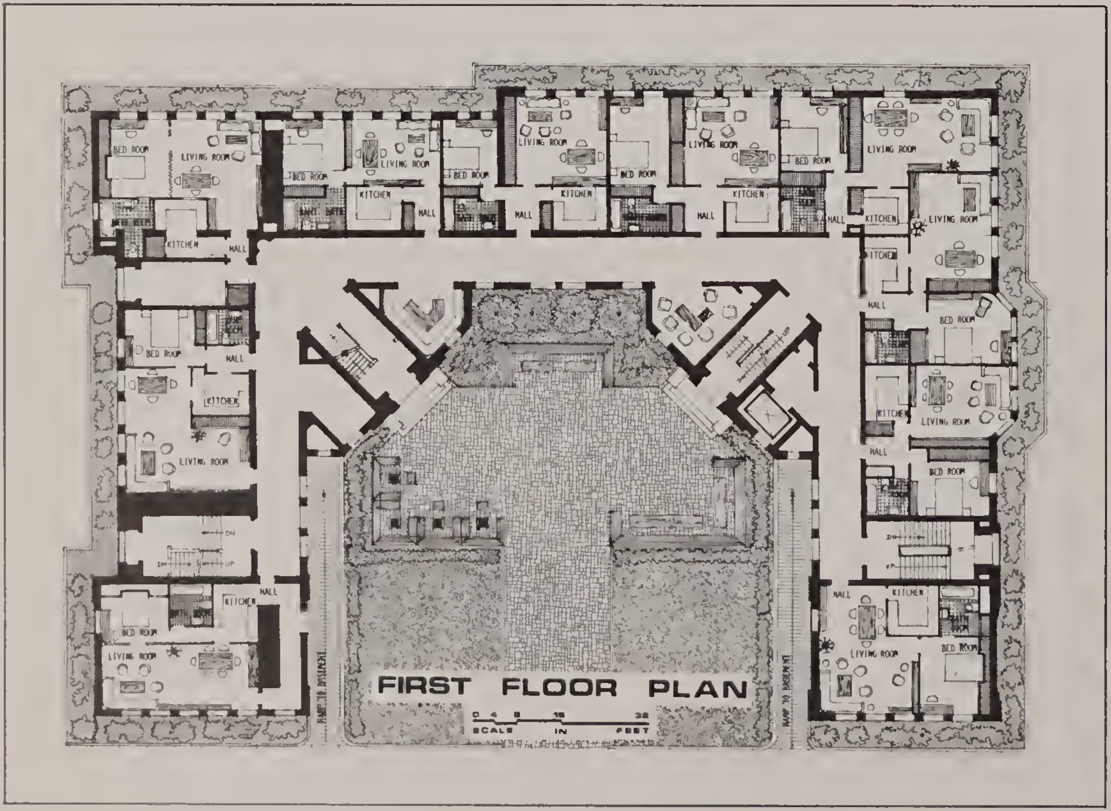
Thus, having assured itself that its tentative scheme for reusing the building was sound, the committee set about preparing for the town meeting. Local newspapers had covered each meeting of the study committee and had reported on the committee's change of heart in favor of adapting the building, so citizens were reasonably well informed. However, to inform town officials personally, members of the study committee reported their conclusions and recommendations directly to each influential board, committee, official and group. Much persuasion and support-building thus was accomplished before the town meeting. The committee also carefully prepared the presentation it would make to the town meeting, including slides of the renovated Central Grammar School in Gloucester and graphics showing tentative DCA plans for reusing the Palmer School.

In its presentation to the Needham town meeting in November 1975 the study committee recommended that the building be preserved, that the town authorize a relatively modest expenditure to assure continued maintenance and security for the building for a period of approximately six months to a year and that the study committee be empowered to invite and review proposals from various potential developers. Thus, the town could save itself the cost of demolition, obtain badly needed housing and community space in the town center and also expect to receive some financial benefit because the building would be placed on the tax rolls.

The reuse concept for the Stephen Palmer School was overwhelmingly approved. In addition, the town meeting empowered the study committee to select and negotiate a suitable agreement with a private developer. The committee proceeded to prepare kits of relevant material describing the reuse project. Advertisements were placed in area newspapers inviting prospective developers to submit reuse proposals and designs for the school, and a deadline of April 9, 1976, was set for receiving submissions.

Formal proposals and designs were submitted by nine teams of developers and architects. Indeed, the quality of the submissions was so uniformly high that the town probably could have chosen any one of the nine proposed schemes and have achieved a successful reuse project. Perhaps a somewhat more focused solicitation process, using initial interviews with interested developer-architects as the basis for requesting more detailed submissions from a limited number of competing parties, would have avoided the costly duplication of professional effort.

The developer chosen for the Palmer School was Crowninshield Corporation, and Anderson Notter Associates was selected as architect. Their proposal calls for accommodating 28 apartments and 6,000 square feet of community space in the former school. Additional attic space would be used for mezzanines and for bedrooms of second-floor apartments. This scheme was presented to the Zoning Board of Appeals in October 1976, and the board later approved a zoning variance so that the project could go forward. Construction and renovation of the Stephen Palmer School was to begin in the summer of 1977.



Floor plan prepared for the Stephen Palmer School Study Committee to show adaptability of the school for housing. (Manya Rege)

The Stephen Palmer School, being converted to downtown apartments. (Hal Appleton)

Randall Library

Location: Route 117 and Crescent Street, Stow

Former use: Randall Library, built 1894 (George B. Adams, architect)

New use: Renovated and expanded library with a new addition

Developer: Library Building Committee, Randall Library

Architect: Finegold and Bullis, Boston

General contractor: Mark Warren Industries, Inc., Wellesley

Construction schedule: Begun May 1974; first occupied May 1975

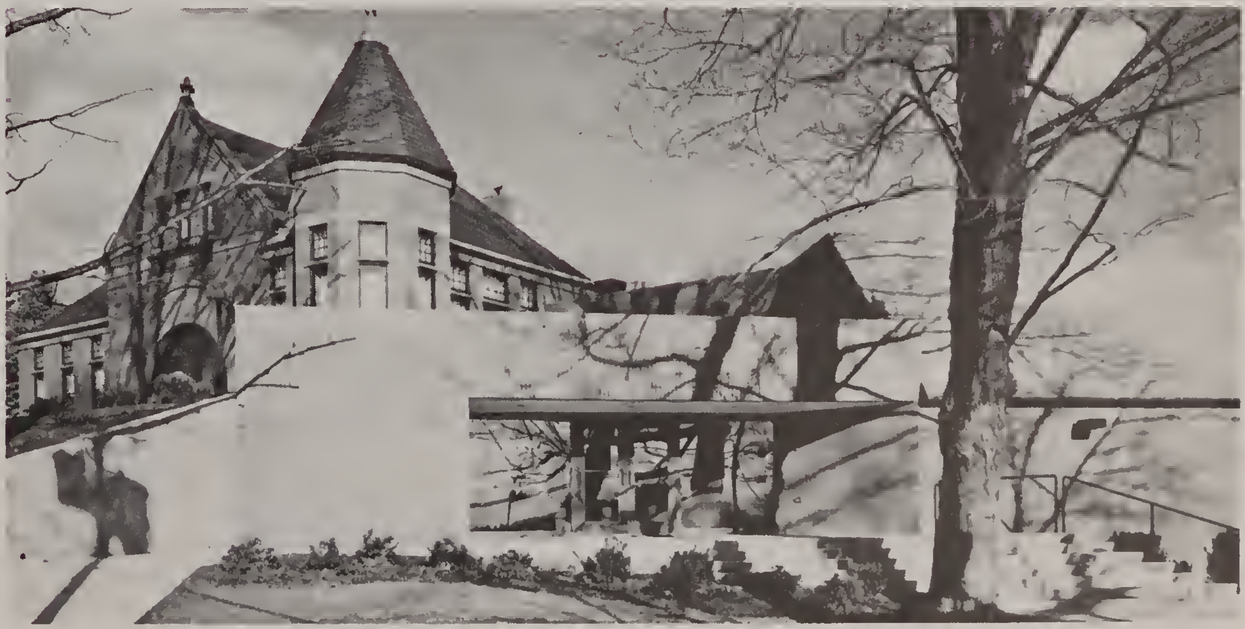
Total floor area: Former: 3,300 square feet (gross, from exerior walls)
1,425 square feet net usable area

Present: 8,500 square feet total floor area
6,500 square feet net usable area (includes reading, stack and staff areas—not toilets, mechanical space, stairs or exterior walls)
1,650 square feet library reused
1,650 square feet reclaimed unused space
5,200 square feet new space

Cost: $304,000 construction
$35.75/square foot

Financing: Funded by a town bond issue, assisted by Library Services and Construction Act, Title II, grant of $72,000 (HEW)

Stow's old library building was typical of small community libraries of its era, full of Victorian and Richardsonian influences. The main floor and unused basement of this charming library were no longer adequate for the increased library usage in the town. In fact, to meet anticipated future library demand, the Library Committee determined that there was a need to quintuple the amount of usable library space—a program goal that might easily have prompted the town to demolish the old building and build an entirely new library on the site.

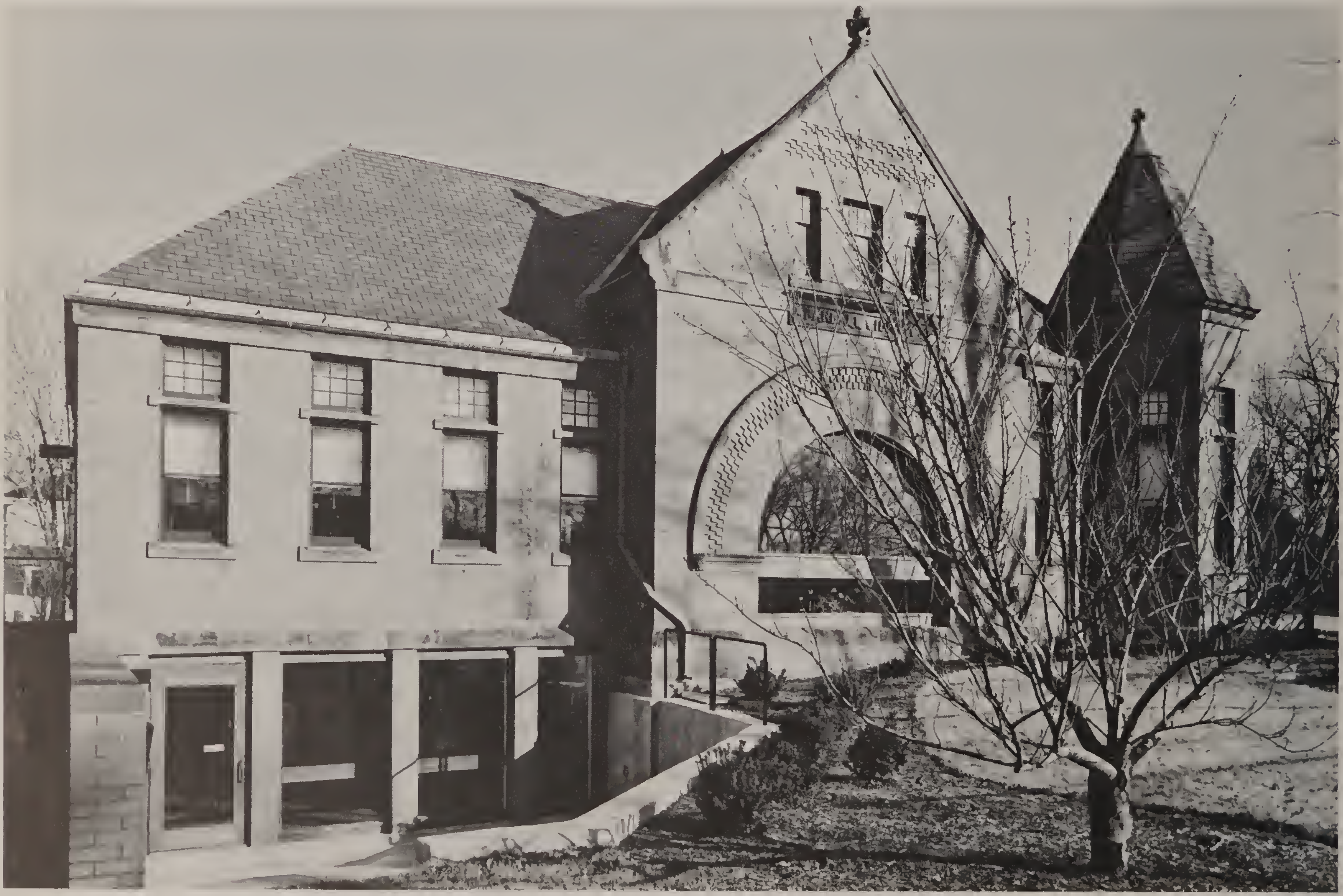


New addition to the Randall Library, with original library in the background. (Jonathan Green)

The Randall Library, showing reused basement space. (Jonathan Green)

Instead, the solution implemented by the committee was to utilize fully the existing structure (reclaiming and incorporating wasted space in the basement) and to add a large wing to the south. The main entrance was reoriented to the town common, lessening the visual impact of the new addition. The color and texture of the brick used for the addition matched that of the original brick, and the steep-slope roof of the old building was repeated in the new. The addition contains large windows that allow pleasant views away from the sun, and large wall areas have ample space for books. Windows in the old library, which are small and high, do not allow a view or sufficient book space. These spaces are now comfortably used as meeting rooms.

The joining of the old and new buildings has created a significantly larger facility that functions internally as a single library, but that nonetheless preserves the outward integrity and appearance of the old library. Indeed, viewed from certain angles the new addition is not even visible; from other angles the addition dominates, seemingly separate from the old building set discreetly in the background. The complex received a 1976 Library Buildings Award from the American Library Association and the American Institute of Architects.



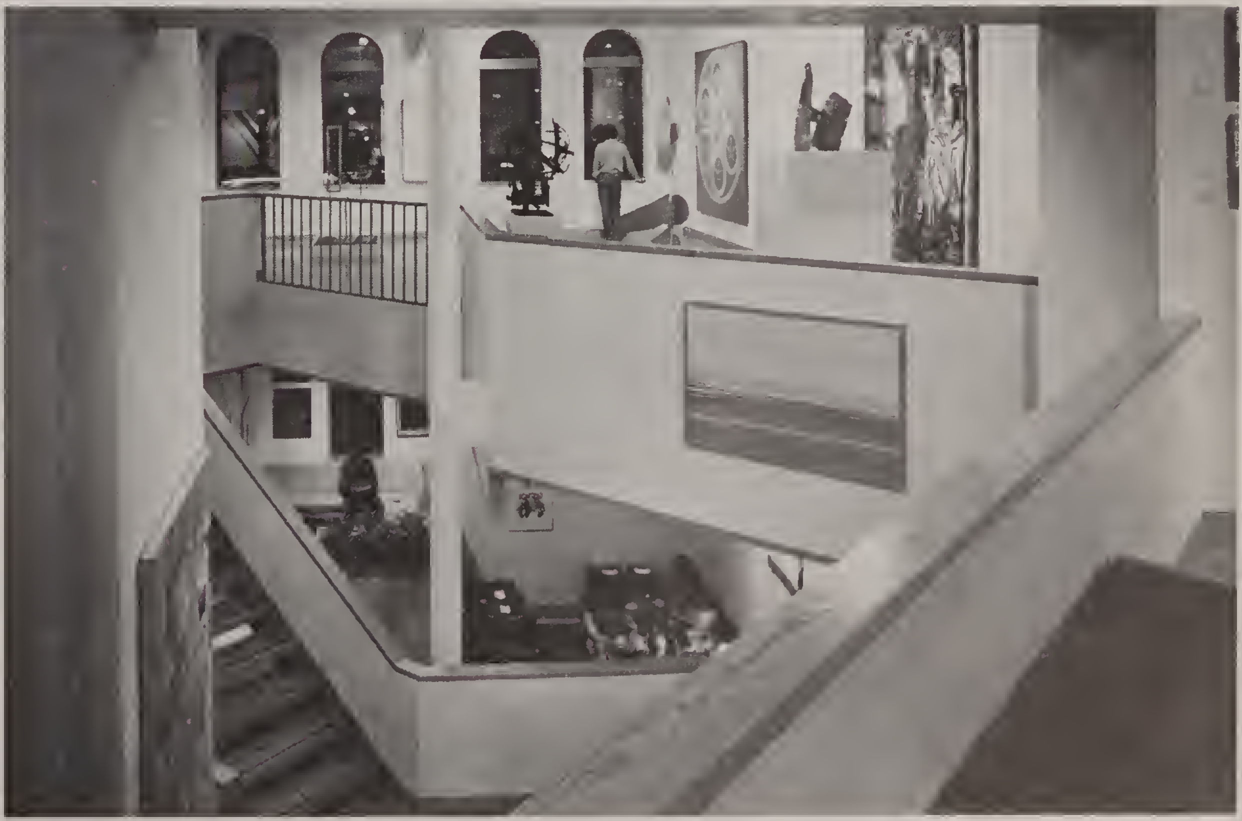
Boylston Street Police Station

Gallery space of the Institute of Contemporary Art. (©Steve Rosenthal)

Location:	955 Boylston Street, Boston
Former use:	Police station, built 1886 (Arthur H. Vinal, architect)
New use:	Institute of Contemporary Art and restaurant
Developer:	Boston Redevelopment Authority (owner, with 80-year lease to Institute of Contemporary Art)
Architect:	Graham Gund Architect, Inc., Cambridge
General contractor:	Faletra and Kumins, Inc., Boston
Construction schedule:	Begun May 1974; completed May 1975
Total floor area:	22,225 square feet 8,290 square feet for galleries 2,400 square feet for restaurant and kitchen
Cost:	$796,000 construction $35.81/square foot
Financing:	Renovation paid for by Institute of Contemporary Art, with financing from New England Merchants National Bank

Two adjacent structures in Boston, one built as a police station, the other as a fire house, show how visually and structurally strong public buildings can adapt to new needs—but in very different ways.

A former police station has been superbly adapted to serve as an art museum and restaurant. Vacant since 1965, the old station has reopened as the new home of the Institute of Contemporary Art, which has a long-term lease for the building with the Boston Redevelopment Authority (BRA). Although the BRA retains ownership of the building, the cost of converting and renovating the former police station was paid by the Institute of Contemporary Art. The institute was more than willing to assume the costs because, according to



Boylston Street Fire Station

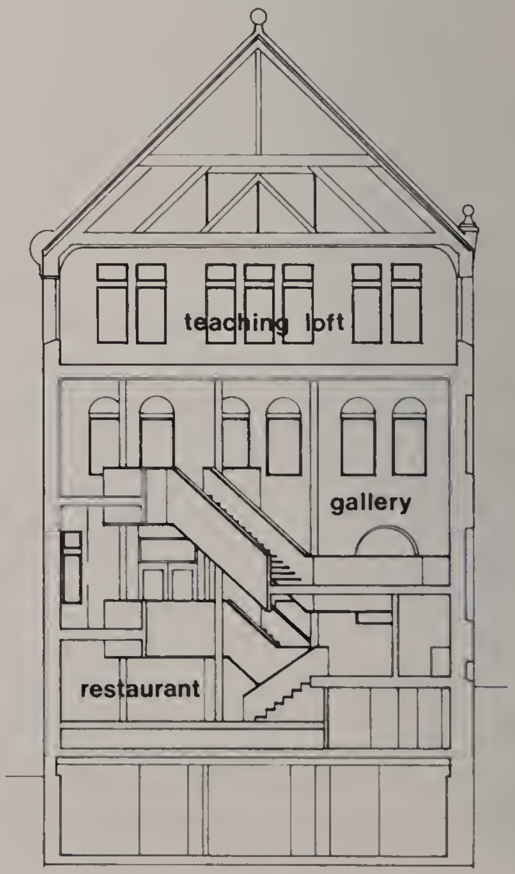
Location:	953 Boylston Street, Boston
Former use:	Fire station, built 1886 (Arthur H. Vinal, architect)
New use:	Fire station
Developer:	Public Facilities Department of Boston
Architect:	Arrowstreet, Inc., Cambridge
General contractor:	Thomas Construction Company, Winthrop
Construction schedule:	Begun August 1970; first occupied June 1971
Total floor area:	12,560 square feet (gross floor area of renovated first and second floors and part of basement)
Cost:	$387,000 construction (includes built-in equipment) $30.81/square foot
Financing:	Municipal bond authorization, submitted by the Boston Public Facilities Department and approved by the Boston City Council

(continued from previous page)

museum officials, the high cost of construction (an estimated $3 million) meant that a new museum was out of the question. The inclusion of a restaurant in the basement of the building—a requirement imposed by the BRA—enables the city to collect approximately $14,000 each year from rental payments in lieu of taxes.

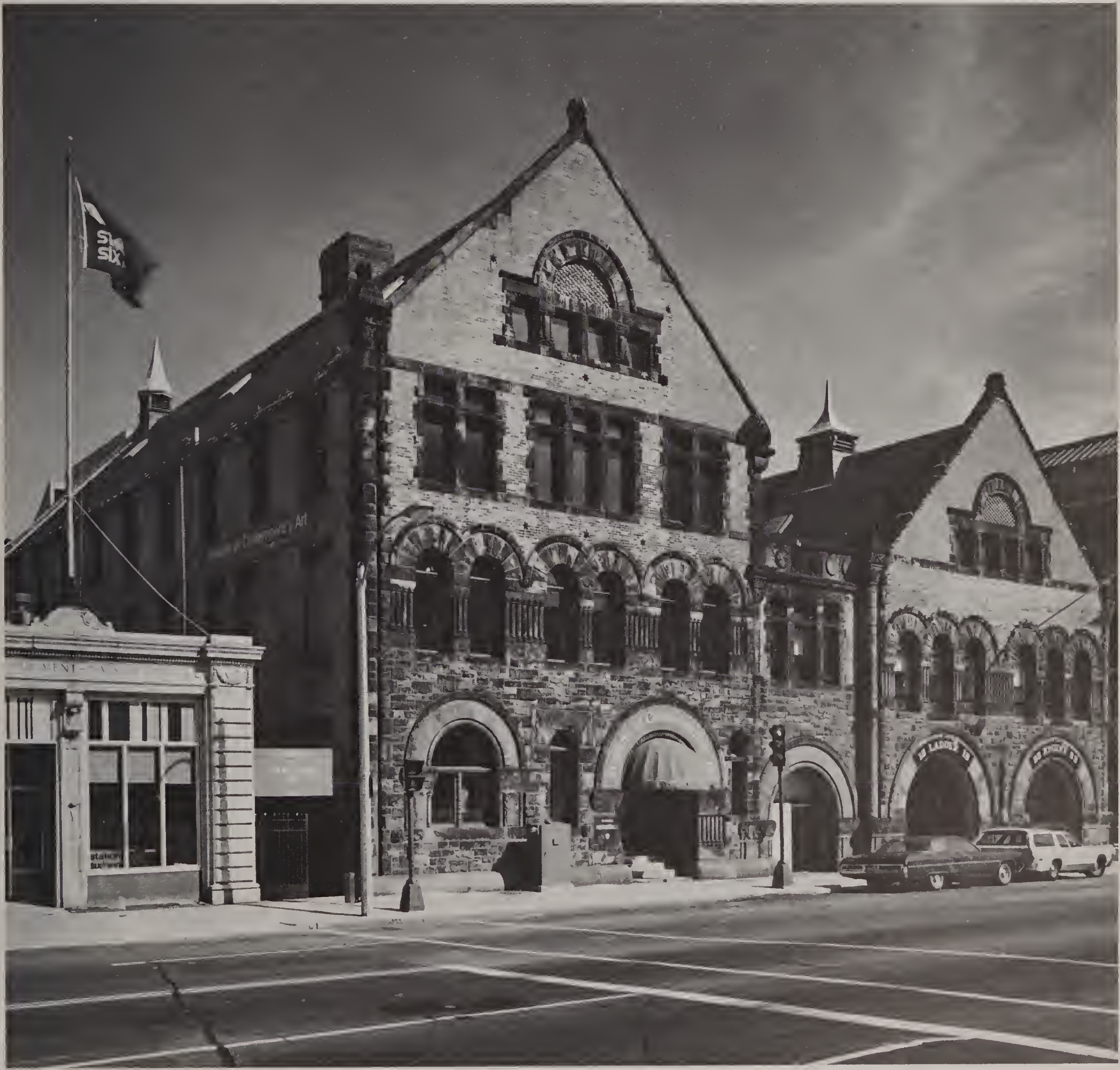
The massive Richardsonian exterior was only cleaned, but the interior was completely remodeled. By opening up the inside of the building, and by ringing this space with a three-story, split-level stairway connecting the various gallery spaces, the architects allowed visitors to view the paintings from numerous angles. The top floor, originally a police drill hall, is now used as an education center and for offices, and the stables at the side have been converted to a theater and leased. Space for storage, a loading dock, elevator, auditorium and workshop were also included. According to the institute's director, Gabriella Jeppson, "there would be no way [through new construction] to get the same kind of spaces we now have."[7]

A fire station attached to the former police station proves that such facilities also can be modernized so that they can continue to perform their original functions. Intended to be replaced by a new fire station, Ladder Company 15–Engine Company 33 was completely renovated to create essentially a new station using the basic structural form of the old building. The architects estimate that constructing a comparable new two-story fire station would have cost the city close to $1 million.



Transverse section of police station as adapted by the Institute of Contemporary Art. (Graham Gund, Architect)

Institute of Contemporary Art (left) and renovated fire station (right). (©Steve Rosenthal)



More Public Building Renovations

In some cases the location of an old fire or police station may no longer favor its continued use, such as when a new facility in a different location can more effectively serve a larger area. Nonetheless, cities and towns are coming to realize that displacement of the original public use of such buildings does not necessarily render them useless. To the contrary, such sturdily constructed public facilities offer tremendous opportunities for reuse, especially for services and functions that otherwise would not be possible. Local communities can assist this process by advertising that they will listen to and encourage such desirable reuse proposals.

Fire station to fire museum. In New Bedford, an old fire station has been transformed into the New Bedford Fire Museum. The old building, an addition to Fire Station No. 4 at the corner of Bedford and South 6th Streets, was renovated by the city of New Bedford at a cost of approximately $100,000 using federal community development block grant funds. The museum opened its doors in July 1976. Funds for constructing displays in the building were obtained from the Massachusetts Bicentennial Commission. The building is leased to the New Bedford Fire Museum Association, which manages and maintains the museum. Hoses from the operating fire station next door are hung in the museum between uses, and a 1975 Maxim fire engine is usually parked in the adjacent fire station, unless it has been called out, lending immediacy to the exhibit.

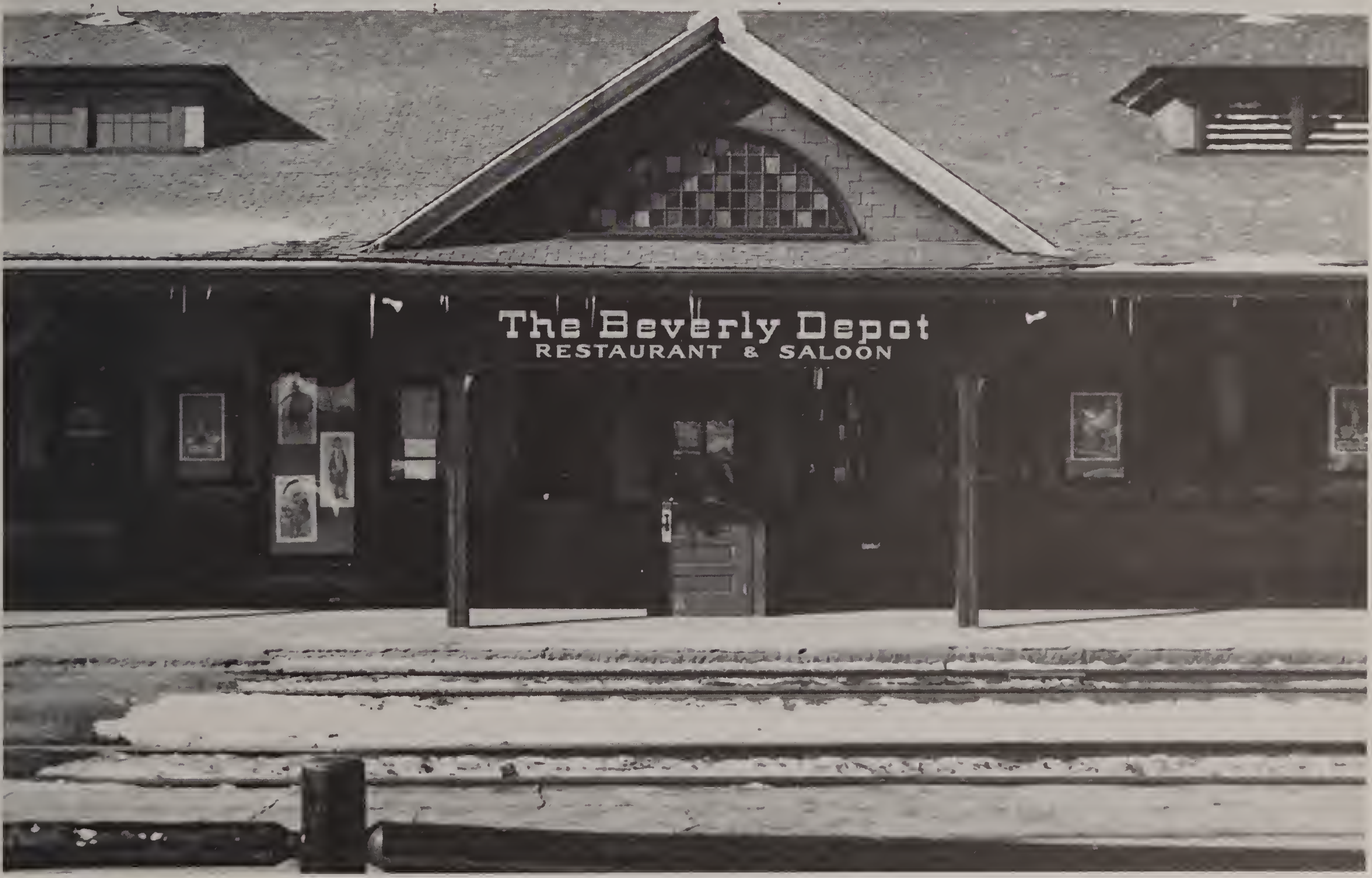
Fire stations to community centers. Reuse of old fire and police stations for community services is not new in Massachusetts. There are small branch libraries in at least three neighborhood fire stations in Taunton, with one of the three (located in East Taunton) also serving as a youth and social service center. The appropriateness of reusing unneeded fire stations to house community service programs has been recognized by the Public Facilities Department of Boston, which through its surplus facilities program has conveyed fire stations for use as a social services teen center and tutorial reading program, a neighborhood recreation center, and for vocational counseling, training and job placement services, etc. Conversion of one of the city's surplus fire stations to a fire-fighting museum also has been proposed.

Fire station to office space. In Lowell, the old Central Fire Station at Palmer and Middle Streets has been sold to a private group that plans to convert it into condominium office space (commercial office space for outright purchase rather than for rent). The exterior of the old fire house will be cleaned but will otherwise remain essentially the same. The graceful arches that formerly defined the bays of the station will provide large and distinctive window space for the offices inside. The developer for this conversion is the Lowell First Development Team and the architect is Perley F. Gilbert Associates.

Fire station to restaurant. In the center of downtown Taunton is the fine old Central Fire Station, which the city may eventually replace with a newer facility at some other location. The old fire station was built at a time when fire pumpers were pulled by horses, and it was so sturdily overbuilt for its original task that it was later able to bear the much greater weight of heavy hook-and-ladder trucks and other contemporary fire-fighting apparatus. The building is surrounded by ample parking provided to serve downtown stores. Recommendations contained in a recent comprehensive plan to revitalize downtown Taunton prepared by the Department of Community Affairs call for the conversion of the structure to use as a restaurant with possibly some shops and boutiques—uses that would thrive in a building with such character.

Railroad stations to restaurants. Railroad stations also offer unique reuse possibilities. Two publications from the Educational Facilities Laboratories provide an exceptional survey of these possibilities: *Reusing Railroad Stations* and *Book Two, Reusing Railroad Stations*.[8] In light of these publications, no detailed discussion of railroad station rehabilitation is required here. An old railroad station in the Brighton section of Boston that has been successfully converted to the Allston Depot Restaurant and the Depot Restaurant in Beverly, Mass., are only two local examples. As pointed out in the publications cited, railroad stations are adaptable to a wide variety of uses. Moreover, as railroad passenger service is improved in response to a growing need for more efficient forms of transportation, it may eventually be found that the most appropriate use of old railroad stations is as railroad stations, possibly combined with other compatible uses.

Post office to courthouse. In Fitchburg a classic post office, built by James Knox Taylor in 1904 and similar to many others he designed, is to become the Fitchburg District Courthouse. The limestone post office became vacant when the U.S. Postal Service decided to build a larger postal facility to serve regional needs. The old post office is centrally located and is conveniently adjacent to the county courthouse. The Fitchburg District Court currently uses inadequate facilities above the police station. The architects hired by the county commissioners to design the renovation are Kennedy, Kennedy, Keefe, and Carney, Boston.



The Beverly Depot Restaurant and Saloon converted from the town railroad station. (National Trust)

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[1] William Marlin. "Old Waterfront Coal Bin to be Municipal Building," *Christian Science Monitor*, August 29, 1975. [2] Ada Louise Huxtable. "Hudson County Courthouse: Whatever Happened to the Majesty of the Law?" *New York Times*, July 22, 1966; reprinted with others of her articles in *Will They Ever Finish Bruckner Boulevard?* a New York Times Book (New York: Macmillan Company, 1970). [3] Robert Campbell. "Mill vs. Mess," *Boston Sunday Globe*, February 16, 1975. [4] Editorial. *Malden Evening News*, November 12, 1976. [5] Bastille-Neiley, Architects. *Preservation and Reuse of Old City Hall* (Malden, Mass.: Author, 1975). Study financed by Malden's community development block grant funds. [6] *Building Construction Cost Data, 1976*, 34th rev. ed. (Duxbury, Mass.: Robert Snow Means Co., 1976). [7] Quoted in "Police Station Adapted As Art Museum," *Preservation News*, August 1975, a monthly newspaper published by the National Trust for Historic Preservation. [8] Available for $4 each from Educational Facilities Laboratories, 850 Third Avenue, New York, N.Y. 10022. See also Appendix B, Reading List.

Early in 1976, a grouping of six distinguished and highly profitable retail buildings on Washington Street in downtown Boston that had served for almost 100 years as the Jordan Marsh department store was demolished by the company to allow for construction of a new department store building. The oldest building, designed by N. J. Bradlee, was completed in 1860 and was one of the few buildings to survive Boston's great fire of 1872; the newest of the group was designed by Samuel J. F. Thayer and built in 1880. The demolition of the original Jordan Marsh buildings is especially regrettable because of the extremely mundane nature of the two-story building being constructed in their place—a building that will resemble thousands of other buildings in suburban shopping plazas across the country.

Economic Feasibility of Reuse

In a larger sense, the destruction of the Jordan Marsh buildings is indicative of the pervasive tendency to replace old commercial buildings long before their physical condition warrants such drastic action. Of all the building types discussed in this book, probably the most rapidly depreciated and replaced are those that have been constructed for commercial use. Indeed, often a decision is made to replace a commercial structure relatively early in its physical life—after 30 or 40 years—for economic reasons that have little to do with its structural soundness.

The assumption, widely accepted in the business and banking communities, has been that the "economic life" of commercial buildings is considerably shorter than their structural usefulness and that aging business structures cannot be adapted and renovated to be competitive with newer buildings. However, recent experience in recycling commercial buildings suggests that these assumptions are open to challenge. Rehabilitated commercial structures—whether they are corporate headquarters, professional offices or retail

Detail of the demolished Jordan Marsh department store, Boston. (©Steve Rosenthal) establishments—can be as successful as the new buildings that would, at a much greater cost, replace them.

The potential economic advantages of rehabilitation over new construction apply to commercial buildings as well as to other building types, but construction cost is not the only important consideration. The primary purpose of commercial buildings is to produce income for their owners and for those businesses that occupy them. When judged by this standard, rehabilitated commercial buildings can compete favorably with buildings of much more recent vintage, often generating a profit margin even wider than that of new buildings. The image and identity that old commercial buildings frequently project are important factors in their continued viability. The exceptional building materials, building skill, work and design of old buildings make them unique in comparison to newer, more austere forms of construction. Often a well-cared-for old building communicates an image of integrity and reliability to customers. Sometimes the special image of an old commercial building derives solely from the fact that it is different and thus distinguishable from more recent structures. Businesses spend vast sums of money for advertising to underscore their uniqueness and identity, crucial ingredients of corporate success. Thus, it is not surprising that many Massachusetts businesses have enhanced their identity—and business standing—by locating in renovated old buildings.

In an attempt to bolster their local tax bases, many communities have encouraged substantial amounts of new construction, such as new office complexes and new retail centers. In many instances, the construction of these new buildings has far exceeded the local demand for additional space, leading to increased vacancy rates in existing commercial structures. A dramatic example of this situation can be found in downtown Boston, where more than 10 million square feet of new commercial office space was constructed between 1970 and 1976. This abrupt expansion in the supply of office space, with only a modest increase in overall office space utilization, has led to high vacancy rates at many of the city's most established and once prestigious office addresses and to outright closing and demolition of many other office buildings. In fact, as of January 1977 as much as 20 percent of the office space in the downtown area, equivalent to 5 million square feet of space, was vacant.[1]

Reusing Surplus Commercial Space

The economics of building construction are clearly changing in favor of reusing surplus commercial structures. Given the extremely high costs of new construction, it no longer makes economic sense to demolish sound commercial structures that can be renovated and reused at comparatively less expense. In 1977 the estimated cost of constructing a new multistory commercial office building in downtown Boston is between $60 and $80 per square foot. When considered from the perspective of steadily increasing replacement costs, old commercial structures—far from depreciating—are probably increasing in value.

As well as continuing to serve their original uses, commercial buildings adapt well for other purposes. The Boston Redevelopment Authority, for example, supports the conversion of suitable office structures for housing. With numerous old office buildings vacant in the downtown area and financial district and many others barely holding on with vacancy rates that cannot be endured in the long run, there are many potential candidates for conversion. One Boston office building, Chauncy House, has already been successfully adapted for housing, and this example is discussed next.

Surplus commercial space in many other urban centers could similarly be utilized. In fact, a comprehensive planning study of downtown Lawrence, completed by Anderson Notter Associates in January 1977, has recommended that the city convert to housing the substantial amount of unused commercial space above first-floor retail establishments downtown. This solution, if implemented, will have multiple advantages: It will utilize space that has been empty for years; it will provide needed housing in a central location, accessible to stores and municipal facilities; it will help to revitalize business in downtown stores; it will generate increased income for downtown property, which in turn will sustain continuing maintenance and improvement of the area; and it will bring people and life to a part of the city that is now deserted after six p.m.

115 Chauncy Street

Location:	115 Chauncy Street, Boston
Former use:	Wendell Phillips office building, built 1921 (Clinton J. Warren, architect)
New use:	Chauncy House Apartments, mixed-income apartment building with 87 units—22 efficiencies, 65 one-bedroom units and commercial space on ground floor
Developer:	State Street Development Company, Boston
Architect:	James Harris Associates, Boston, with Boston Architectural Team as supervising architect
General contractor:	Noram Construction Company, Boston
Construction schedule:	Begun January 1974; completed February 1975
Total floor area:	66,911 square feet (gross) 24,728 square feet circulation, community space, other nonrentable 38,883 square feet residential 3,300 square feet commercial
Cost:	$1,275,000 construction $19.05/square foot $2,002,400 total development $21,500/unit $29.93/square foot
Financing:	Massachusetts Housing Finance Agency, in conjunction with U.S. Department of Housing and Urban Development. Approved by the city of Boston as 121A project

Caught in the spiraling vacancy rates among older office buildings in downtown Boston, this 12-story building in the garment district had reached a vacancy rate of 60 percent—making it no longer feasible to continue its original use. The building was ideally located in walking distance of downtown department stores and public transportation, and the idea of converting the building to residential use was seen as a way of avoiding demolition.

If the city had required on-site parking spaces for tenants the conversion to apartments would have been impossible. As it turned out, fears that new apartments in the downtown area would aggravate traffic and parking problems proved groundless: Chauncy House is fully rented and not a single tenant owns a car. Clearly, self-selection among potential tenants helps to avoid problems; people wishing to have a private car handy at all times choose not to live at Chauncy House. For those who use public transportation, Chauncy House is ideal and there is no need for a car.

The Chauncy House conversion is not a special case; it may in fact suggest the possibility of more frequent conversions of downtown office buildings to apartments. For example, needed elevator shafts were already in place, avoiding the cost of having to cut away or construct new ones. Also, no new staircases were needed to change the building from commercial to residential use. The large office-style windows were especially attractive for apartments, providing good ventilation and ample sunlight. Many old office buildings possess interior light and ventilation shafts—a major consideration because access to sunlight is a crucial factor affecting the feasibility of conversion to apartments. Chauncy House is solidly constructed, with masonry walls and concrete floors that make the building essentially fireproof to begin with, an important asset in meeting fire code regulations.

Although the exterior of the structure was virtually unchanged, the interior was completely transformed, with an entirely new floor plan and with all new mechanical systems—new boilers, new electrical wiring, new windows, etc. The result was a building with new and modern apartments, in a highly central location, but with features available only in an old building, such as an elegant lobby and marble staircase.

Chauncy House was fully leased in about six weeks, with about 60 percent of the tenants coming from the nearby Chinese community. In fact, the project has been so successful that the State Street Development Company has started negotiations to acquire for conversion to residential use two other foreclosed downtown office buildings owned by banks.[2]

Boston office building converted to the Chauncy House Apartments. (S. M. Spinetto)

The Garage

Location: Harvard Square, Cambridge

Former use: First level constructed c. 1900 as storage facility for trolleys. Later converted to parking garage and two parking levels, with ramps added

New use: Indoor shopping bazaar, with restaurant and nightclub on new level

Developer: Wasserman Development Corporation, Cambridge. Present owner, Connecticut General Life Insurance Company

Architect: Architecture Design Development, Inc. (ADD), Cambridge

General contractor: Jacet Construction Company, Cambridge

Construction schedule: Begun November 1971; first occupancy March 1972

Total floor area: 77,000 square feet (gross, including addition)

Cost: $2,000,000 construction
  $25.97/square foot
$3,000,000 total development
  $1,000,000 acquisition of site and building
  $38.96/square foot

Financing: Private conventional financing

The renovation of The Garage has provided a unique shopping environment especially conducive to bringing together an exciting mix of small specialty stores. Like other old buildings cited in this handbook (the Brine Warehouse, page 44, for example), the building was so well constructed that it could take the extra weight of another floor (a fourth floor added to the structure thus produced an extra 16,000 square feet of rentable space). Also, like the Masonic Hall in East Boston and One Winthrop Square in Boston, The Garage offered virtually maximum lot coverage—one that would not be allowable under present zoning. Thus, the amount of rentable space in the old garage actually turned out to be greater than the amount of floor space obtainable by constructing a new building on the site.

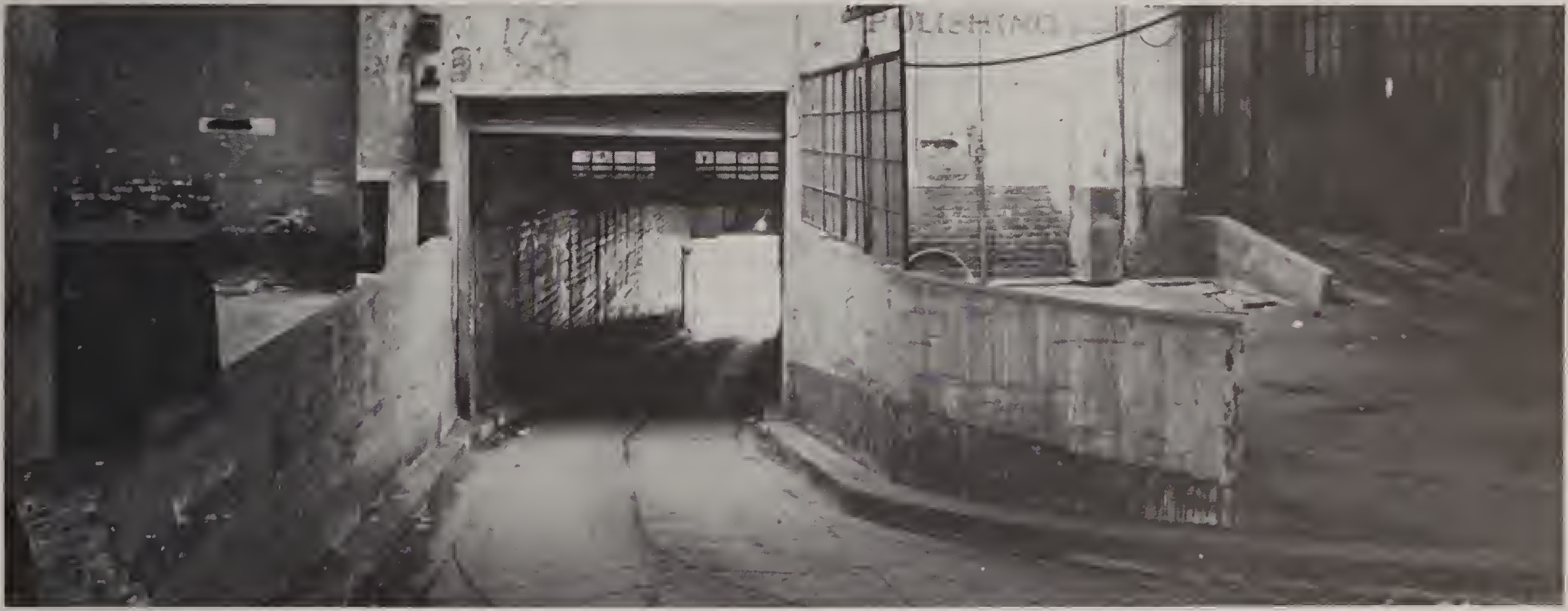
The prime location of The Garage in Harvard Square of course contributed to its reuse potential. The exterior was retained, enhancing its design compatibility with other nearby buildings. The details of the exterior masonry walls were restored and bricked-up windows and arches were reopened. The new fourth level was faced with brick to match the lower floors.[3]

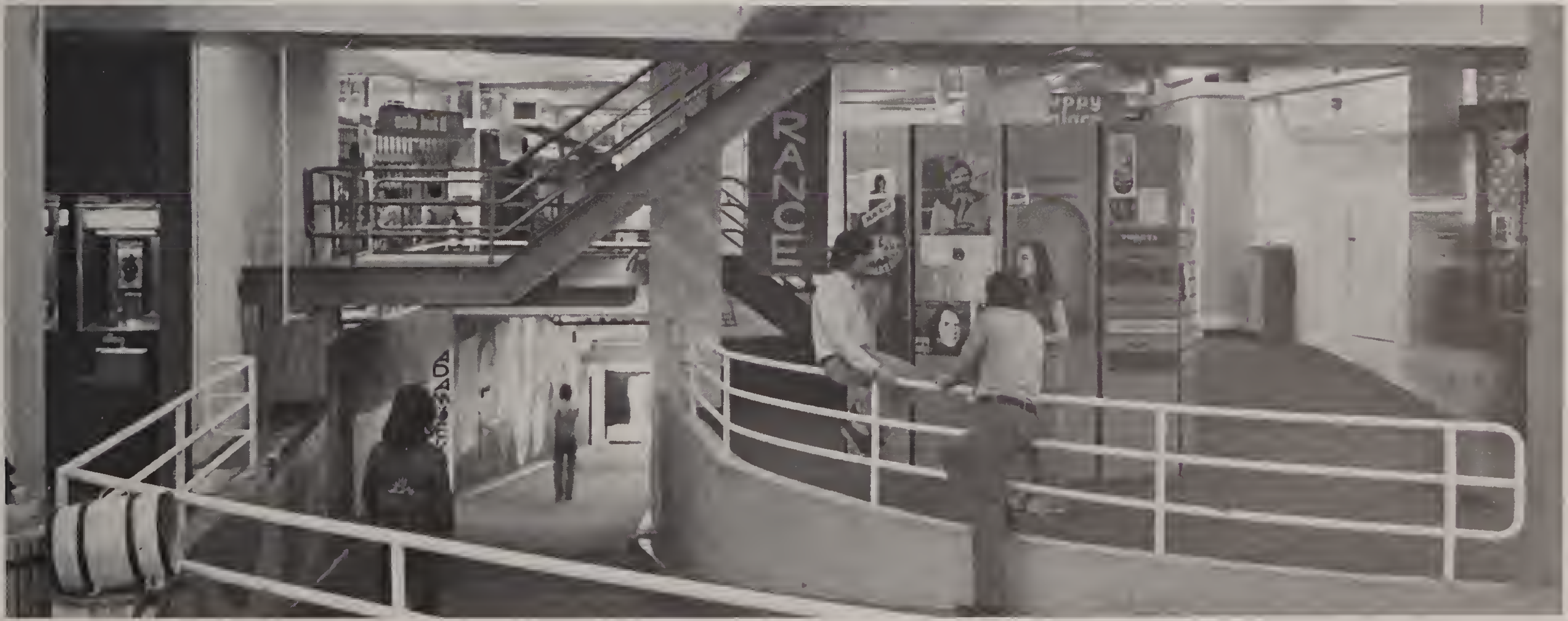
On the interior, the two levels connected by the former car ramps allowed for a flexible mixing of open space areas for use by the small shops. This shopping bazaar is enhanced by a large restaurant in the basement and two nightclub–concert halls on the new upper level.

The idea of renovating a large vacant structure and subdividing it for occupancy by relatively small busi-

Interior of The Garage, before renovation and after conversion to an indoor shopping bazaar. (top, Architecture Design Development, Inc.; bottom, ©Steve Rosenthal)

nesses is applicable to many communities. Small stores, especially in small and medium-sized communities, frequently have a difficult time competing with large businesses located in shopping plazas because the small stores are generally dispersed throughout the community and therefore fail to reinforce one another. Bringing many businesses together under one roof can be an effective way of retaining the diversity of small businesses while also attaining the identity and drawing power of larger establishments. As this case suggests, such an environment can be achieved by making use of otherwise unneeded "white elephants" like The Garage.





One Winthrop Square

Location: One Winthrop Square, Boston

Former use: Constructed 1873 (Emerson and Fehmer, architects) to accommodate a variety of commercial establishments, primarily retail outlets featuring quality apparel. From 1924 to 1972 headquarters for the New England Press and the *Boston Record American*, including newsrooms and printing plant, distribution and loading docks

New use: Office building with retail establishments on ground floor

Developer: Raymond Cattle Company, Boston

Architect: Childs, Bertman, Tseckares Associates, Inc., Boston

General contractor: N. S. Raymond Development Company, Boston

Construction schedule: Begun February 1973; first occupancy August 1974

Total floor area: 100,000 square feet (gross)
- 86,000 square feet net leasable area
- 80 percent office space
- 20 percent retail space

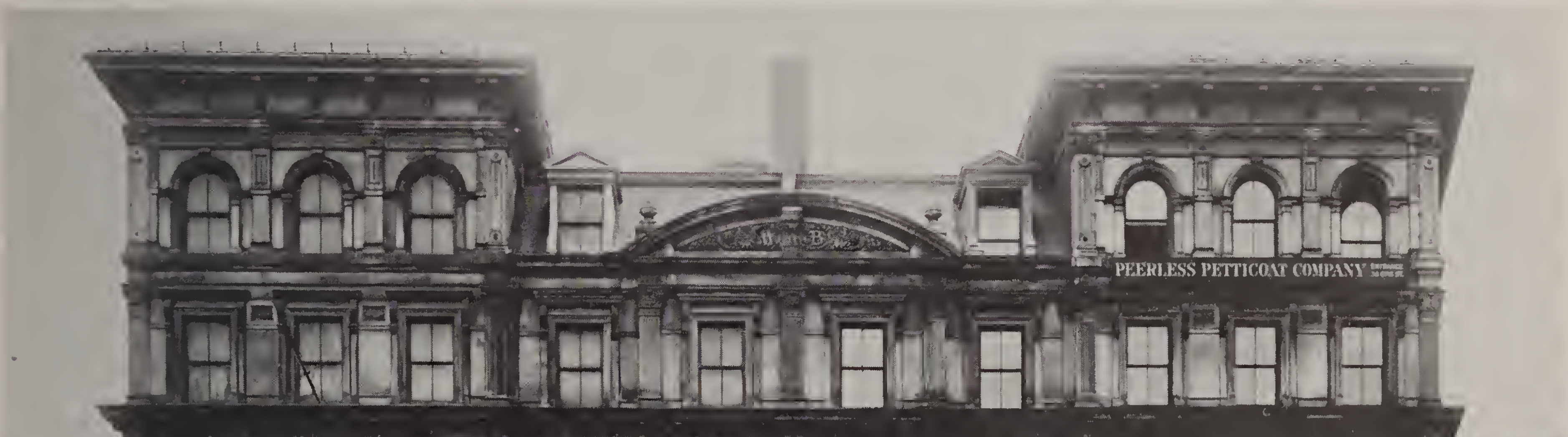
Cost: $3,720,000 construction
- $3,600,000 building renovation
- $120,000 site improvement
- $37.20/square foot

$4,700,000 total development
- $47/square foot

Financing: Private conventional financing. Construction financing from State Street Bank, Boston. Permanent financing from Connecticut General Life Insurance Company

The example of One Winthrop Square demonstrates that it is feasible to renovate an old commercial building for modern office space even in an area of high-density development. Although One Winthrop Square is surrounded by competing highrise office buildings that are very expensive but offer tenants little individuality or uniqueness, the developer was confident that there was a strong demand for commercial space in a renovated old building. The economic feasibility of the renovation was bolstered by the following factors: (1) The building, although only five stories high, contained a relatively large amount of floor space. (2) The building filled almost the entire lot, a much greater lot coverage than allowable for a new building on the same site (present zoning would have required much greater setback). (3) The percentage of potentially leasable floor space in the building was relatively high, approximately 86 percent. (4) Space rented first could be renovated first, while work on other parts of the building could be scheduled according to demand. (5) The total development cost of renovating One Winthrop Square into first-class office space, while not cheap, was still less than the cost of constructing new office space in downtown Boston; the cost of new highrise office building construction currently ranges from $60 to $80 per square foot. Renovation included new office layouts, heating and ventilation systems, lighting and carpeting. One Winthrop Square and Boston's newest highrise office buildings rent office space at approximately the same rates.

Proving that cities can do much to encourage renovation of old buildings, the city of Boston committed city funds to construct a park in front of the renovated building, on space used for decades as a parking area for trucks. The removal of excess pavement and the provision of a small new park enhance the brightly cleaned exterior and have made One Winthrop Square a showcase for renovation, a haven in an otherwise stark financial district dominated by highrise office buildings. The combined effect of the renovation and the new park has been to dramatize the way in which reuse of old buildings can contribute to a more vibrant and vital downtown area. In 1976 the architect and developer received a Special Award from the National Trust for One Winthrop Square and their other Boston recycling projects.



One Winthrop Square when it housed commercial establishments. (courtesy Childs, Bertman, Tseckares Associates)

Brine Warehouse

Location:	3 Appleton Street, South End, Boston
Former use:	Built about 1890 as five-story furniture warehouse. In 1940s used by Brine Sporting Goods Company to manufacture lacrosse sticks and store athletic equipment
New use:	Six-floor apartment bulding, with 20 units, 2 penthouses and a restaurant
Developer:	Urban Dynamics Associates, Inc., Boston
Architect:	Boston Architectural Team
General contractor:	Urban Dynamics Construction Company, Boston
Construction schedule:	Begun August 1975; completed July 1976
Total floor area:	31,500 square feet (gross) after conversion 4,500 square feet commercial 27,000 square feet residential 510–600 square feet/studio units (9) 735–820 square feet/one-bedroom units (7) 946 square feet/two-bedroom units (4) 1,320–1,600 square feet/penthouse units (2)
Cost:	$510,000 construction $17,312/two-bedroom unit $18.30/square foot $710,000 total development
Financing:	Private conventional financing. Construction financed by State Street Bank, Boston

In Boston a typical, undistinguished five-story brick warehouse has been transformed into a highly functional apartment building. Because it was built as a warehouse, the structure was exceptionally well constructed, with sturdy, thick wooden beams capable of carrying extremely heavy loads. Subdividing the interior for apartments was a relatively easy matter because there was only one row of center posts supporting overhead beams that spanned the width of the building. Twenty apartment units were constructed on the first five floors, with a sixth floor added to the top of the building to obtain two penthouses. A restaurant occupies the basement space.

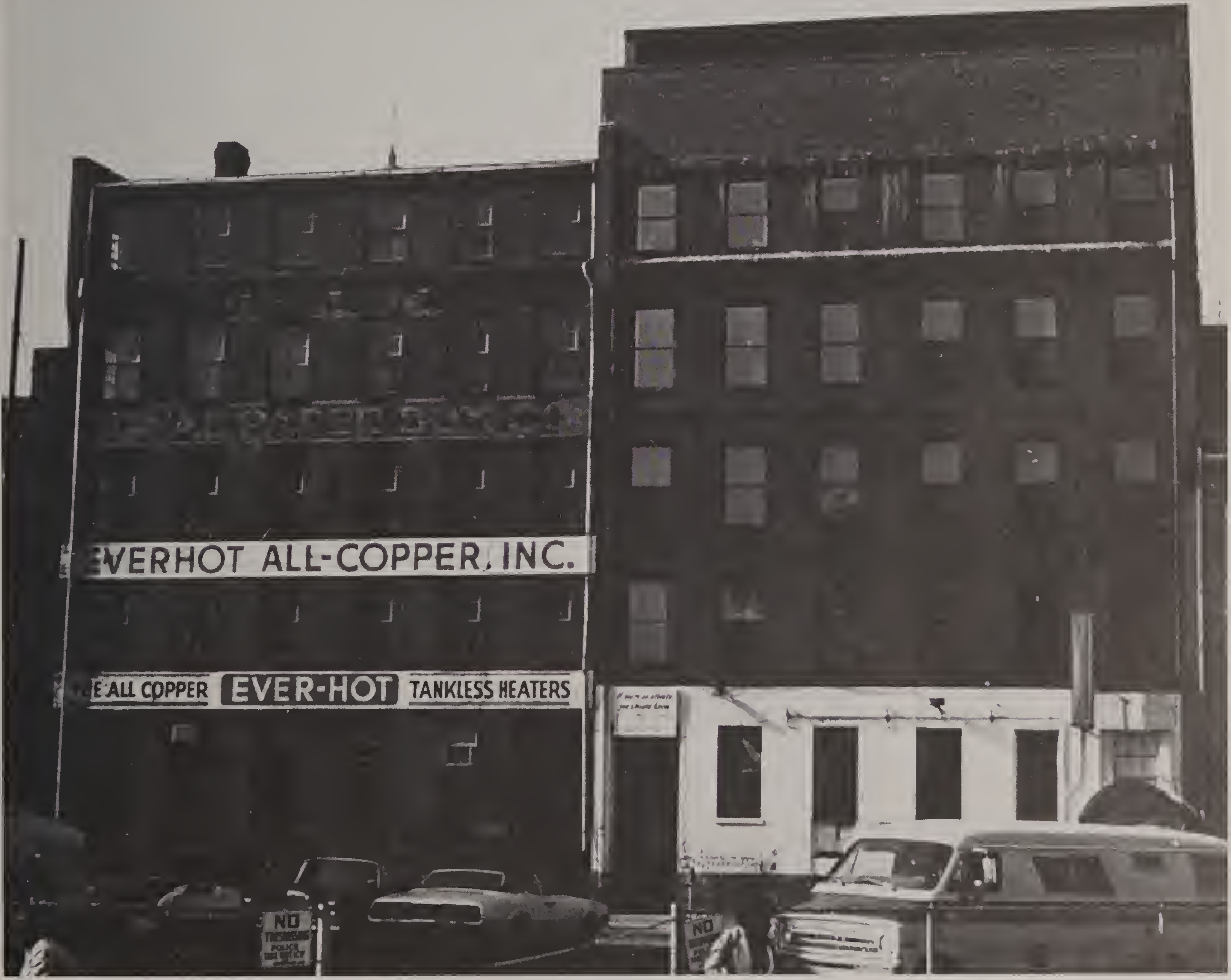
By October 1976, three months after the warehouse renovation was completed, 100 percent of the apartments had been rented and occupied. One of the reasons for the popularity of the apartments was undoubtedly their generous size.

Prior to its conversion the building had two freight elevator shafts; one was removed and the other was used to accommodate a new passenger elevator. Because of the economies inherent in reusing such a structure, the cost of constructing new apartments in the former warehouse was substantially less than the cost of comparable new construction. Exact renovation costs per unit of course varied according to apartment size. A new sprinkler system was installed

The Brine Warehouse, at right, and its "sister" warehouse. (Gene Bunnell)

throughout the building in every apartment and every closet, and smoke detectors were placed in every apartment as well.

Visitors to the new Brine Warehouse apartments are treated to a kind of before-and-after contrast; the converted building is attached to an identical "sister" warehouse that has not been rehabilitated. This building is occupied by a company that manufactures hot water heaters. Standing as they do, side-by-side, the buildings provide a simple reminder of the diversity of uses to which old buildings can be put, and of the beauty inherent in even the most seemingly ordinary looking buildings.



The Chart House Restaurant on Boston's Long Wharf. (Nat Griffin, Urban Land Institute)

Old commercial buildings to restaurants. Restaurants often thrive in the atmosphere of an old building. In Boston many of the city's finest restaurants have made their homes in old commercial structures. Of course, the success of the Durgin Park restaurant in the old Quincy Market is legendary. More recently Boston has seen other restaurants take advantage of the special quality and ambience of old buildings: the Scotch and Sirloin on the top floor of an old warehouse in the North End, Clarkes restaurant in an old brick building not far from Faneuil Hall and the Rusty Scupper in the basement of an old granite warehouse on the Boston waterfront.

Among the outstanding recent examples of old buildings used for restaurants is the Chart House Restaurant, located at 60 Long Wharf in Boston and converted by Anderson Notter Associates. The three-story building, with its heavy timber beams and old brick, has the character to make a new restaurant a special place. It can even be argued that it is the distinctive atmosphere, and only secondarily the food, that draws so many patrons to the restaurant and makes it a successful commercial venture.

Old offices to new offices. Older commercial structures continue to offer distinctive office space. The commercial value of locating businesses in old buildings has been recognized in particular by a number of Boston-based architectural firms. The firm of Perry, Dean, Stahl and Rogers, Inc., occupies space in the turret of the old Flour and Grain Exchange Building at 177 Milk Street, which was constructed in 1892 and designed by Shepley, Rutan and Coolidge. The firm of Bastille-Neiley, Architects, is located in the old Boston Lead Works at 184 High Street. Mintz Associates Architects/Planners, Inc., occupies One Dock Square, a former meat-rendering plant. The firm of Anderson Notter Associates shares an old warehouse with the Scotch and Sirloin at 77 North Washington Street.

Service station to bank. In Cambridge, near Harvard Square, an automobile service station has been successfully renovated as a bank. When the Coolidge Bank and Trust Company purchased the service station it intended to raze the building. The bank hired PARD Team, Inc. (now Mintz Associates), to design a 10–12-story office building for the site. But when plans for the new building were completed in 1971, interest rates and costs of new construction had both risen substantially (at a rate of almost 20 percent per year). As a result, plans for the new building were shelved, and instead the architects were retained to transform the service station itself into a bank.

The cost of renovating the station was approximately $250,000. The renovated bank includes both walk-in and drive-in banking—the drive-in tellers' windows incorporated in the former bays of the service station garage. In addition to saving the bank the cost of constructing a new building, the converted service station gives the Coolidge Bank a distinctive facility that, because it is easily recognizable, helps to enhance the identity and prestige of the bank as a whole.

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[1] Based on an April 1976 survey conducted by the Building Owners and Managers Association of the Greater Boston Real Estate Board and additional estimates for other office buildings not included in the survey. [2] William E. Dorman. "Housing from Offices: Carter Checking How Boston Does It," *Boston Globe*, November 28, 1976. [3] "Preservation and Change in the Individual Building," *Architectural Record*, December 1974, pp. 110–11.

"The lights again are burning brightly in the old Card Tap and Dye Mills in Mansfield, a complex left standing for many years abandoned and unwanted and growing as an eyesore with each passing year.

"But gone forever are the myriads of machinery that hummed daily when the mill was thriving, and gone also are the power house and the landmark smoke tower and, of course, the whistle signaling the end of each work shift.

"In their place thick rugs cover the 120,000 square feet of mill space, long corridors line each of the four floors, a swimming pool has replaced the old power house and household furniture—traditional to contemporary—sits throughout the complex where rows of machines stood."[1]

Mills, factories and industrial structures are the lifeblood of many New England and other American cities and towns. The construction of mill buildings along rivers in the 19th century, for example, provided the impetus for establishing scores of cities and towns; Lowell (see pages 114–16), Lawrence, Fall River and Holyoke are but a few of the more prominent examples in Massachusetts. America's industrial heritage has continued to pervade the development of most communities to this day, as evidenced by the printing industry in Kingsport, Tenn., helicopter production in San Diego and automobile assembly lines in Detroit.

Since World War II, however, old urban areas have witnessed a steady decline and exodus of industries that traditionally accounted for a large proportion of their total employment—in Massachusetts the textile, leather goods and shoe industries. The result has been a substantial surplus of industrial space in urban factories and mills that, despite their disuse, are still structurally sound. Unfortunately, the value of these structures has not always been recognized because years of neglect and lack of maintenance have made them

Lower Pacific Mills lining a canal, Lawrence. (©Randolph Langenbach) appear shabby and decayed. Yet the frequently unsightly appearance of these buildings should not blind communities to their potential for reuse by new industry or conversion to needed housing. Although often overlooked, even reinforced-concrete factories built in the last century are finding new uses. Indeed, as the cost of replacing this space through new construction becomes almost prohibitively expensive, it is becoming clearer that communities cannot *afford* to neglect these well-built resources.

To Attract New Industry

The idea of using under-occupied or vacant factories and mills to attract new industry is proposed as a key goal of the *Growth Policy for Massachusetts*, compiled by the Massachusetts Office of State Planning. The policy, which was released in preliminary form in October 1975, recognized the obvious economic importance of available low-cost industrial structures already served by existing highways, sewers and water lines. The report points out that such relatively inexpensive space is especially useful as an incubator for small businesses with potential for future growth.

Improvements in interstate and regional highway systems have tended to make most industrial locations in Massachusetts, as elsewhere, reasonably competitive in accessibility to major markets and suppliers. Moreover, because a large proportion of the basic materials and components for Massachusetts industry come from outside the state, it seems reasonable to assume that most types of industry are capable of locating anywhere in the state. The availability of cheap industrial space and an ample supply of skilled and unskilled labor, which often coincides with this vacant space, thus can be important assets for attracting new industry.

Perhaps the most outstanding example of a mill serving as an incubator for a growth industry can be found in Maynard, Mass., where the Digital Equipment Corporation was founded in 1957, operating from the former Assabet Mill (constructed in the 1860s, with additional mill buildings built through 1920). From its humble beginnings, Digital expanded to eventually occupy all the available space in the rambling mill complex. Digital is now one of the world's largest manufacturers of minicomputers and has become so large that the firm constructed an additional industrial complex in Maynard (continuing to occupy the Assabet Mill). By 1976 the firm employed approximately 10,600 Massachusetts residents.

Surplus space in old factories and mills frequently helps to attract businesses that would otherwise locate elsewhere. The architectural design firm of Sasaki Associates, Inc., chose to locate in Watertown, Mass., because of the presence there of the large 100-year-old Chase Mills. This is a complex of interconnected mill buildings, most of heavy timber and frame construction, that offers great flexibility in creating a variety of work and office spaces. Sasaki Associates, Inc., was also attracted by the relatively low cost of renovation of the Chase Mills for office use; 40,000 square feet of mill space was renovated at a cost of only $250,000, or approximately $6.25 per square foot (excluding acquisition). Like many old industrial buildings, Chase Mills is centrally located near Watertown Square, giving it the advantage of easy accessibility for employees and clients.[2]

Conversion to Housing

Some old mills and factories, however, no longer lend themselves to commercial or industrial use. Some industrial operations, for example, cannot be adapted for multistory mill structures. Even if businesses can be attracted to use the first floors of such structures, the upper floors (a majority of the space) may remain vacant. Of course, barriers to industrial reuse sometimes simply reflect a generally unfavorable economic climate. Another factor that has discouraged continued industrial use of some former mills and factories is the fact that such structures have become surrounded by residences, making industrial use less desirable in terms of evolving land use patterns. New industrial use also may be prohibited by zoning.

In cases where commercial and industrial reuse is no longer feasible or desirable, communities should be aware of the strong potential for converting factories and mills into highly attractive and desirable residential structures. In fact, for industrial buildings in neighborhoods now primarily residential, the factors discouraging industrial use can encourage conversion to apartments. In a residential neighborhood, apartments are not only a compatible use for the vacant structure but also encourage community stability. The following case studies suggest the scope of such possibilities for conversion and their economic and aesthetic advantages.

Leeds Textile Mill

Location: Main and Mulberry Streets, Northampton

Former use: Textile mill, constructed 1875

New use: Leeds Village apartments, mixed-income apartment building with 19 units and 2 commercial studio spaces

Developer: Leeds Village Associates, Holyoke

Architect: Douglas Haring, Boston

General contractor: Marken Corporation (a subsidiary of Leeds Village Associates)

Construction schedule: Begun March 1975; first occupancy February 1976

Total floor area: 25,000 square feet (gross)
  18,750 square feet residential and exitways
  900 square feet basement
  750 square feet storage
  1,400 square feet community space
  3,200 square feet rental studio space

Cost: $335,000 construction
  $17,600/unit
  $13.40/square foot
$471,635 total development
  $60,000 acquisition
  $18.86/square foot

Financing: Construction and permanent financing from Massachusetts Housing Finance Agency

The former Leeds Textile Mill is a handsome 19th-century mill structure with a particularly graceful bell tower, a feature not uncommon to mills of that era. The mill was constructed in the center of the village of Leeds, one of three long-established unincorporated villages in Northampton. As the mill prospered the village grew, and the mill was gradually surrounded by two to three-story frame houses that today form an attractive middle-income residential neighborhood. Textile operations in the mill ceased in 1970 and the building was vacant for five years, although it was used occasionally for light manufacturing and cold storage. Because of the evolving residential character of the immediate area, it seemed both logical and desirable to convert the mill to new housing.

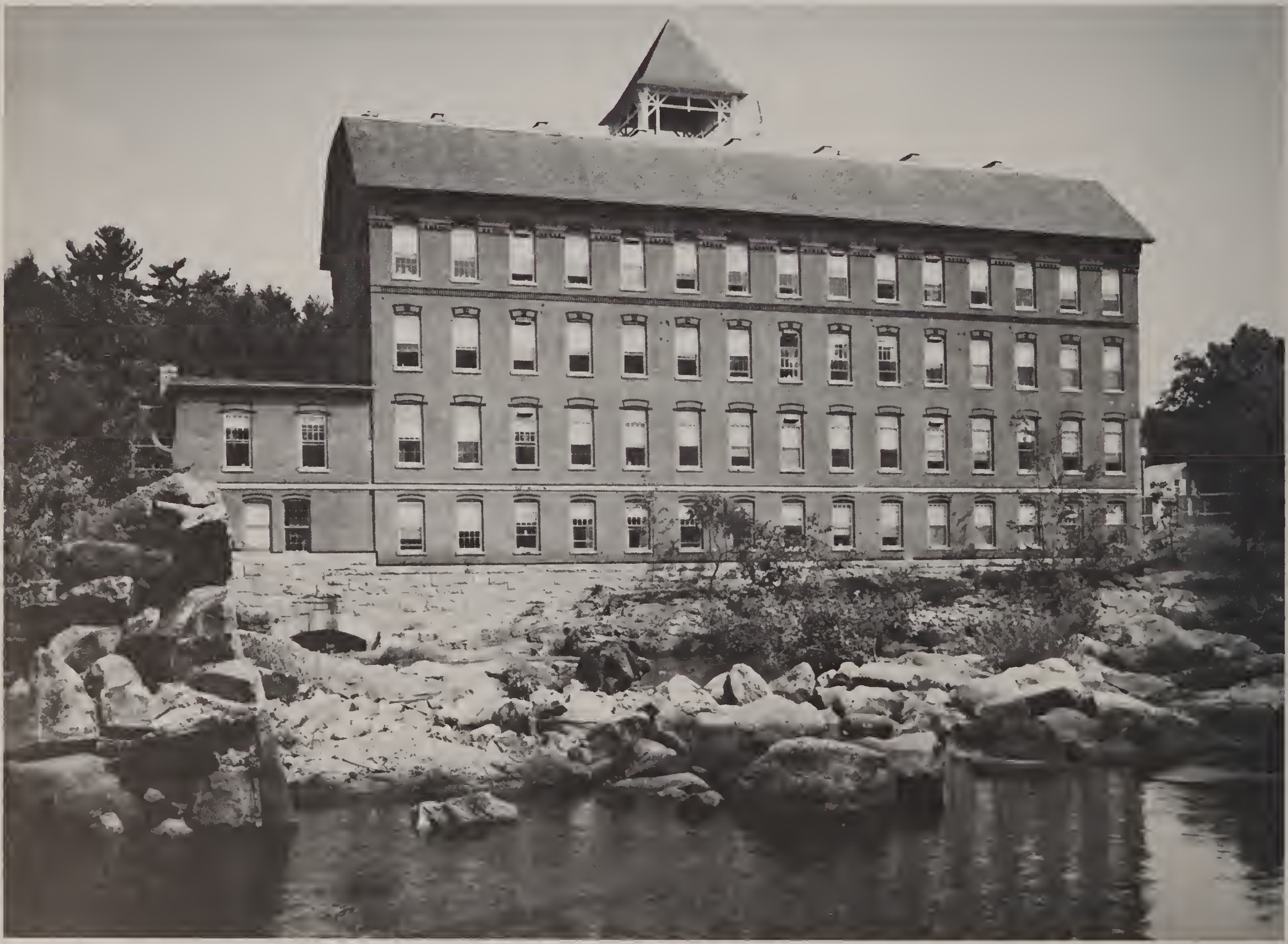
The developer had some difficulty in obtaining a variance from the town's zoning board of appeals to allow the change from industrial to residential use. In granting the variance, the board restricted to 19 the housing units that could be constructed in the building, although 23 could have been accommodated. The board's reasoning was that more than 19 housing units, in relation to the size of the site, would have exceeded the density of housing units per acre prevailing in the surrounding neighborhood. This limitation could conceivably have made reuse of the mill less feasible, but the fourth floor of the building (attic level) was subdivided into two rental studio spaces for artists, a commercial use that met the board's requirements.

The 40-by-120-foot dimensions of the building proved highly adaptable

Leeds Village apartments in the former Leeds Textile Mill. (Phokion Karas)

to housing, allowing for 16 two-bedroom apartments (average size 850 square feet) and three one-bedroom units (average size 600 square feet).

The fourth-floor loft area was subdivided into two 40-by-40-foot studios with skylights and a community room of similar dimensions. Subdividing the floors into appropriate spaces was an easy matter, especially on the third and fourth levels, where no internal support columns interfered. On the first and second floors load-bearing columns supported 40-foot horizontal beams; however, because these beams spanned the width of the building, the locations of the support columns could be shifted somewhat to accommodate apartment walls, although the architect had to make certain that the vertical support columns aligned from the basement through the second-floor level. New stairways were constructed at opposite ends of the building to conform to safety and building codes, and an elevator was constructed in the bell tower.



Chickering Piano Factory

Location: 791 Tremont Street, South End, Boston

Former use: Piano factory, built 1853

New use: Piano Craft Guild, 174 apartment-studios for artists and artisans

Developer: Gelardin/Bruner/Cott, Inc., Cambridge

Architect: Gelardin/Bruner/Cott, Inc., Cambridge. Anderson Notter Associates, Boston, supervising architects for MHFA

General contractor: Noram Construction Company, Boston

Construction schedule: Begun January 1973; first occupancy February 1974

Total floor area: 220,000 square feet (gross)
177,898 square feet net leasable

Cost: $2,300,000 construction
$13,218/unit
$10.50/square foot
$3,500,000 total development
$20,115/unit
$15.91/square foot

Financing: Construction and long-term financing from Massachusetts Housing Finance Agency

"A very special case? Not so special as it appears. Most cities have old commercial buildings like the piano factory. The secret is in choosing the right one and then knowing what to do with it. Even at today's prices, Bruner and Gelardin's methods would make a similar rehab possible for $15 to $18 a sq. ft.—half the cost of conventional rehab."[3]

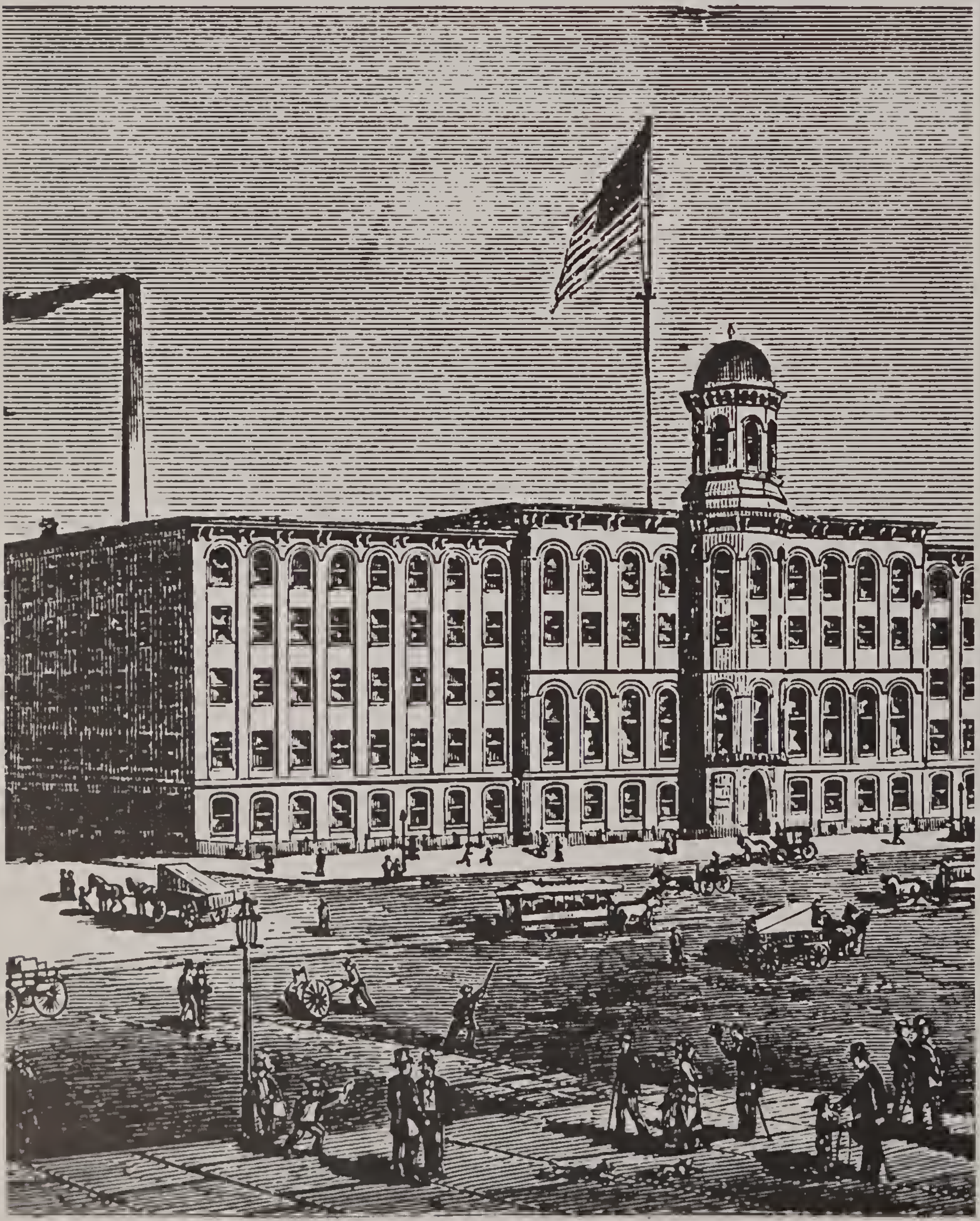
At the time of its construction in 1853, the Italianate-style Chickering Piano Factory was the second largest building in the United States—second only to the United States Capitol. Pianos were manufactured in the building until the mid-1930s, when the company was sold and moved from Boston. By the 1970s the building's appearance had deteriorated and it was only partially occupied by an assortment of small businesses. City real estate taxes on the building had not been paid in five years.

Despite the massive appearance of the building from Tremont Street, the Piano Factory is actually quite modest in depth, built more like a doughnut than a solid mass. The relatively shallow depth of the building—approximately 49 feet—is typical of industrial buildings of its era, which were built before the widespread use of electricity and mechanical ventilation systems. The fact that such buildings were constructed to take advantage of natural sunlight and natural ventilation provides potential benefits for converted apartments; the Piano Craft Guild apartments have large windows and good sunlight. The enclosed space in the center of the building is now a 24,000-square-foot inner courtyard that has been landscaped and terraced.

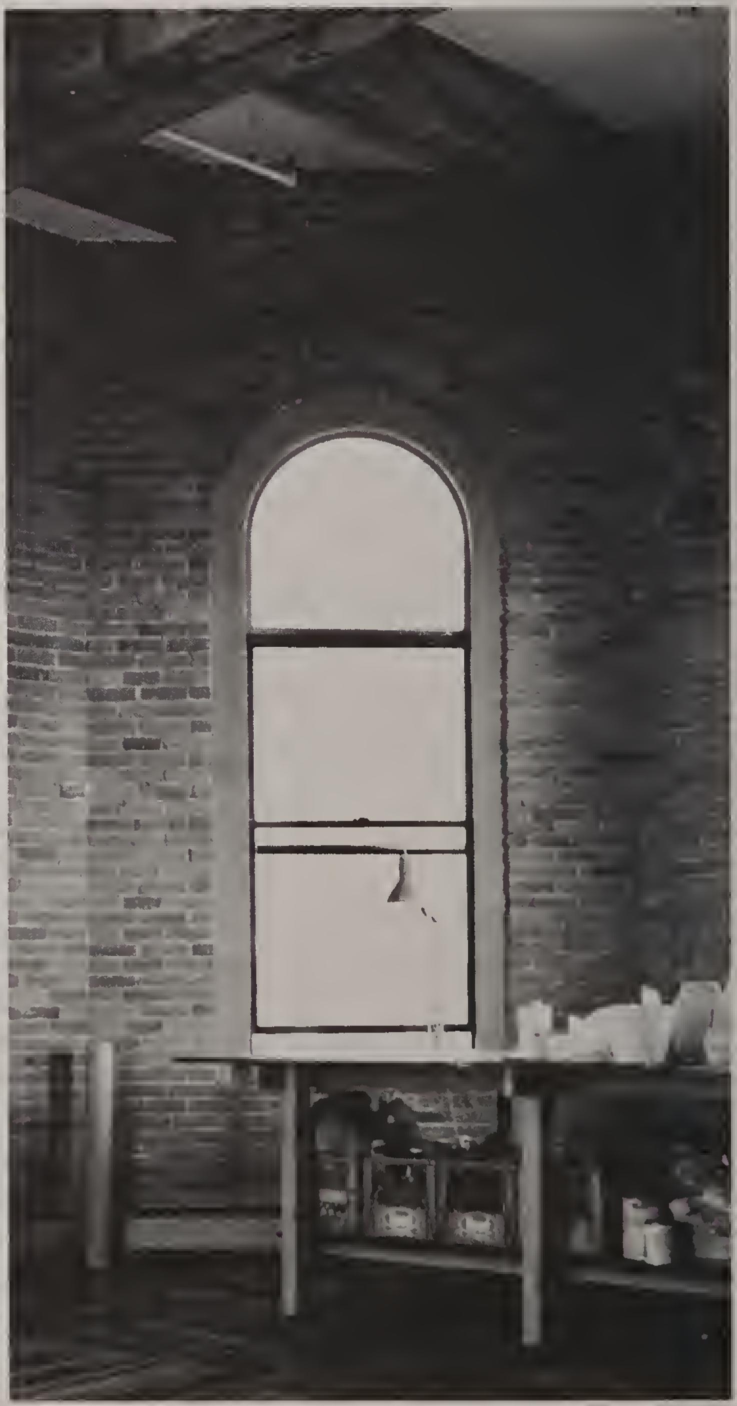
The generous amount of space in the factory, almost a quarter of a million square feet, made possible the creation of spacious apartments that seem all the more open because of ceilings that are 10 to 20 feet high. The apartments were left generally undivided, in an "open plan," so that they could double as studios and working spaces to better serve the needs of artistic tenants.

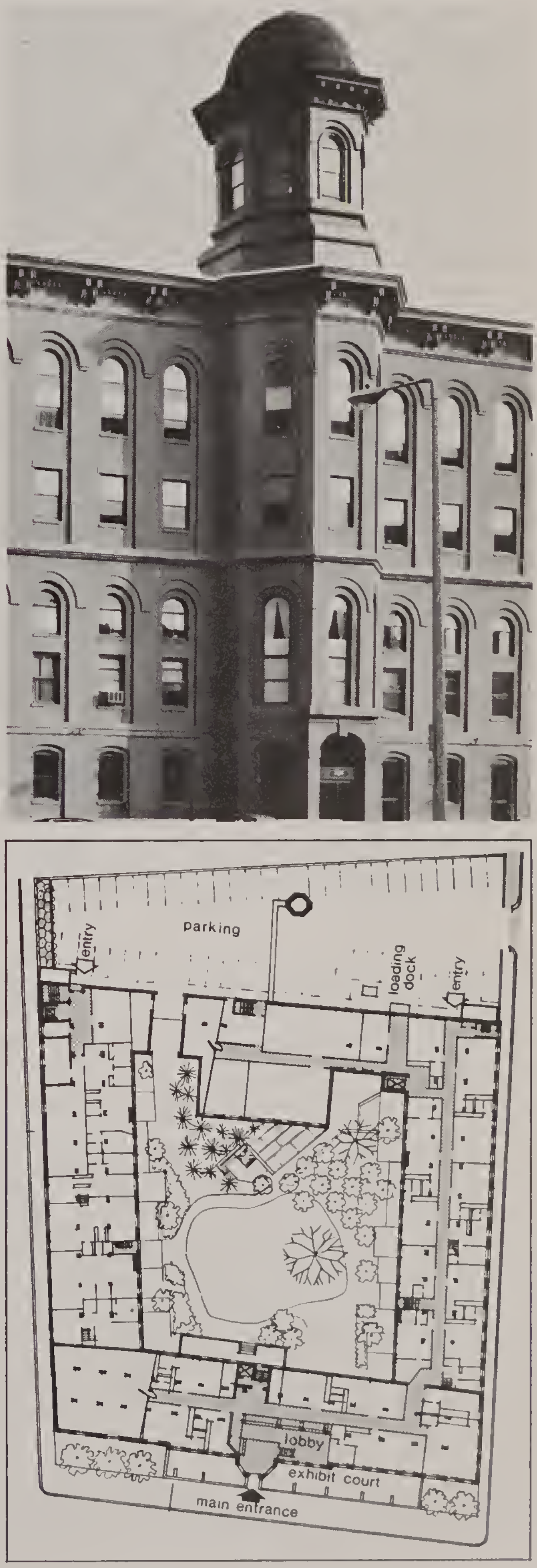
Some of the ways in which the costs of converting the Piano Factory into apartments were minimized are cited by Michael Robinson in *House & Home*.[4] "The conversion made sense economically only if the building's innate, rough-hewn character could be retained. . . . Massive structural elements, such as 12″ × 12″ fir and pine columns, would stay in place. . . . Floors, beams and walls would be sound, but not always plumb, level or new. Finish work had to be plain, clean and attractive—

The Chickering Piano Factory as it looked in 1853. (The Bostonian Society; copy by Greg Heins)



Apartment interior after conversion to the Piano Craft Guild. (©Greg Heins)





Piano Factory tower and site plan for residential and studio use. (top, ©Greg Heins; bottom, Gelardin/Bruner/Cott, Inc.)

free from time-consuming detail and ornamentation."

Specific construction shortcuts included:

—"Sanding down and, where necessary, patching the flooring at a cost of $60,000 instead of replacing it at a cost of $375,000.

—"Rebuilding three existing elevators for $60,000 instead of installing new ones for $150,000.

—"Repainting the exterior brick for $15,000 instead of exposing the brick, which would have cost $85,000 for sandblasting, pointing and sealing.

—"Applying electric lines—in conduits—directly to brick walls. Savings: a 15% reduction on conventional wiring costs.

—"Leaving piping—sprinkler, steam, water, etc.—exposed wherever practical. Savings: approximately $200,000. . . .

—"When the developers installed a new heating plant inside the rear section of the rehabbed building, they knocked down the boiler house but preserved the chimney. 'We ran an overhead heating exhaust line, supported by an old girder we found in the factory, out from the building to the chimney. . . . The overhead exhaust looks good and saved us about $20,000 compared to the cost of knocking down the old chimney and putting up a new steel one.' "

Another significant savings, and an advantage of many old factory buildings, was the building's functioning sprinkler system, which needed only updating and partial renovation.

Old factories often can be modified to increase floor space and to create varied and interesting apartment layouts. In the Piano Factory, for instance, two-thirds of the old roof was cut away so that dormers could be constructed, turning 21 fifth-floor apartments into two-level duplexes with mezzanines reached via ships' ladders.

The central entrance to the converted factory now leads into a gallery where works of resident artists are displayed. Plans are being developed for a restaurant-coffee house at the basement level adjacent to the gallery. This area was once uninhabitable because it lacked windows, but it has been ingeniously transformed by a wide, basement-level trench in front of the building. The basement windows now look out onto what is essentially a patio beneath the sidewalk level. With this design solution, the main entrance to the building has much the same effect as a gangplank crossing a moat.

The financing of this conversion is particularly worth mentioning. The project was included in the Boston Redevelopment Authority plan for the area, making available federal funds for relocation of tenants. The rents at the Piano Craft Guild are based on income and ranged from $91 to $401 in 1975, with 25 percent of the units renting at market rate, 50 percent subsidized and 25 percent figured at a quarter of a tenant's income. The developers paid a combined sweat and cash equity of $400,000 and retained control as general partners, but sold a 90 percent interest to a syndicate of limited partners. These limited partners in turn obtained a five-year tax write-off based on an assumed 20 percent annual depreciation rate plus an 8 percent return on their equity investment.

A. C. Lawrence Tannery and Crowninshield Mansion

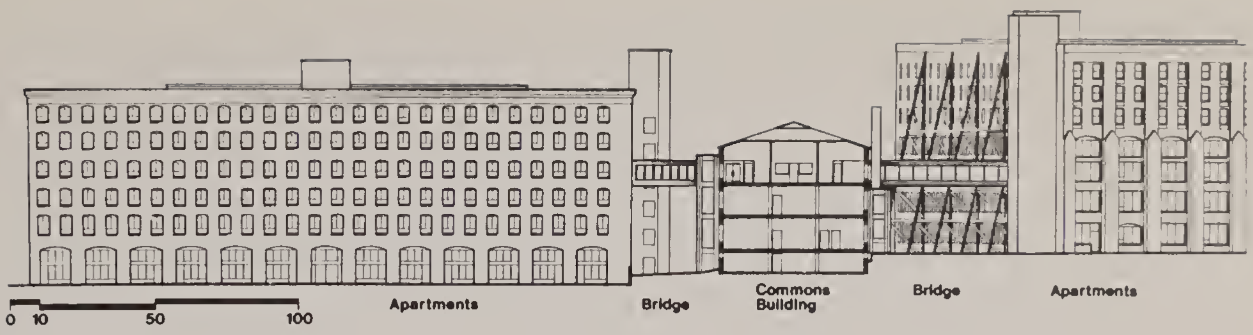
Location:	50 Warren Street, Peabody
Former use:	Mansion built 1814 and two major tannery buildings constructed 1894. Complex vacated 1971
New use:	The Tannery Apartments, with 284 units—19 efficiency, 236 one-bedroom and 29 two-bedroom. Mansion converted to offices and community space
Developer:	Crowninshield Apartments Associates, Peabody
Architect:	Anderson Notter Associates, Boston
General contractor:	Taylor, Woodrow, Blitman Construction Corporation, Boston
Construction schedule:	Begun June 1974; first occupancy February 1975; completed July 1975
Total floor area:	259,890 square feet (gross)
Cost:	$4,500,000 construction $15,845/unit $17.32/square foot $6,247,237 total development $950,000 acquisition of site and buildings $21,997/unit $24/square foot
Financing:	Permanent 40-year financing of $5,662,513 from Massachusetts Housing Finance Agency. Approval of 121A tax agreement by city of Peabody

Given the generally unappealing nature of the tanning process, it took real imagination to recognize the inherent value this site offered for housing. A pond adjacent to the former A. C. Lawrence Tannery had been used as a dumping ground for wastes from the tanning process and was so polluted that it had a noxious effect on the surrounding area. And, despite the site's location three blocks from Peabody's business district, there was little interest in residential use of the buildings when the Lawrence Leather Company vacated them in 1971—primarily because they were located in an industrial zone.

The 8.7-acre complex is dominated by two massive six and seven-story brick and masonry structures (1894). Also included is the three-story, Federal-style mansion built in 1814 by Richard Crowninshield, who established a woolen mill nearby. Varied tannery buildings, including a power plant and sheds, were razed for parking and open space; however, an old smoke tower was retained as a landmark for the project.

The conversion of The Tannery for residential use did not attempt to conceal its origins; the developers initially proposed naming the project the Crowninshield Estate, but dropped this pretentious-sounding name when it became clear that eager tenants were not discouraged by reminders of The Tannery's history. In fact, the architects ended up emphasizing the industrial processes that formerly took place in the buildings by retaining old wooden vats and tanning wheels as planters in the courtyard. Other tanning equipment, such as steam-operated pumps, has been placed in prominent locations as if it were sculpture.

Although images of the buildings' industrial past have been retained, all offensive reminders of the tannery have been eliminated. The



Elevation drawing of The Tannery apartment complex (right), old wooden vats and tanning wheels used as planters in the courtyard (center), and two tannery buildings and the Crowninshield Mansion during conversion (below). (right, Anderson Notter Associates, Inc.; center, Phokion Karas; below, ©Randolph Langenbach)

four-acre mill pond has been completely dredged, cleaned and widened to serve as a visual and recreational amenity for residents. Children from the area can now be seen fishing off walls and walkways. The large area surrounding the pond has been attractively landscaped and planted. Tile and brick floors of buildings demolished on the site provide convenient pedestrian plazas and terraces. The old catwalks became pedestrian walkways connecting the two buildings with the mansion at the third-story level.

Because the site once accommodated the comings and goings of large numbers of workers and was able to provide ample parking for employees, it was equally capable of accommodating the similar requirements for access, traffic flow and parking associated with relatively high-density housing.

Within the main tannery buildings, heavy timber beams and ceilings were sandblasted to give apartments a warm and natural appearance. Heating and electrical systems and plumbing in the recycled buildings are completely new. The Tannery also has new and recycled elevators, new insulated-glass windows and new roofing.

Apartments in The Tannery are, on the average, 33 to 50 percent larger than apartments currently being provided in conventional new multifamily housing for a comparable price. If there is a drawback to the large apartment units, which average approximately 900 square feet, it is that the windows of some apartments seem small in relation to the spaces they must illuminate. Aside from this, the units themselves are generally pleasant and functional. Fifty-four of the units were constructed as two-level duplex units, and 10 percent were specially equipped for handicapped tenants. These special features, in addition to the proximity of the project to downtown and to the city hospital, have attracted tenants. The short 13-month period it took to reach full occupancy and the 80 percent occupancy before completion indicate the feasibility and need for the complex. Demand for apartments continues to be strong proof of The Tannery's acceptance and desirability as a unique living environment.

Prince Macaroni Factory

Location:	45-63 Atlantic Avenue, Boston waterfront
Former use:	Spaghetti factory and warehouse, built 1917
New use:	Prince Building apartments with 42 family-sized units, 2 levels of enclosed tenant parking and a level of office space, 2½ floors added for duplex and penthouse apartments
Developer:	Trident Realty Trust, Boston
Architect:	Anderson Notter Associates, Boston
General contractor:	Gerry and Northrup Company, Boston
Construction schedule:	Renovation begun June 1966; completed July 1967; new construction begun November 1967; completed May 1968
Total floor area:	90,000 square feet (gross) 72,500 square feet residential 10,000 square feet parking 7,500 square feet offices
Cost:	$1,400,000 construction $15.55/square foot
Financing:	Suffolk Franklin Savings Bank, Boston

One of the first transformations of a factory to housing in Boston was the conversion in 1967 of the former Prince Macaroni Factory to 42 family-sized apartments. The idea of converting the factory to apartments was considered daring at the time because the area was characterized by warehouses, wharves and deteriorating commercial structures. Yet architect Timothy Anderson of Anderson Notter Associates was convinced of the viability of the project and was able to obtain financing from the Suffolk Franklin Savings Bank in Boston. What then seemed so unconventional now seems terribly natural and obvious—virtually all of the old industrial buildings surrounding the Prince factory have been, or are being, refurbished and recycled.

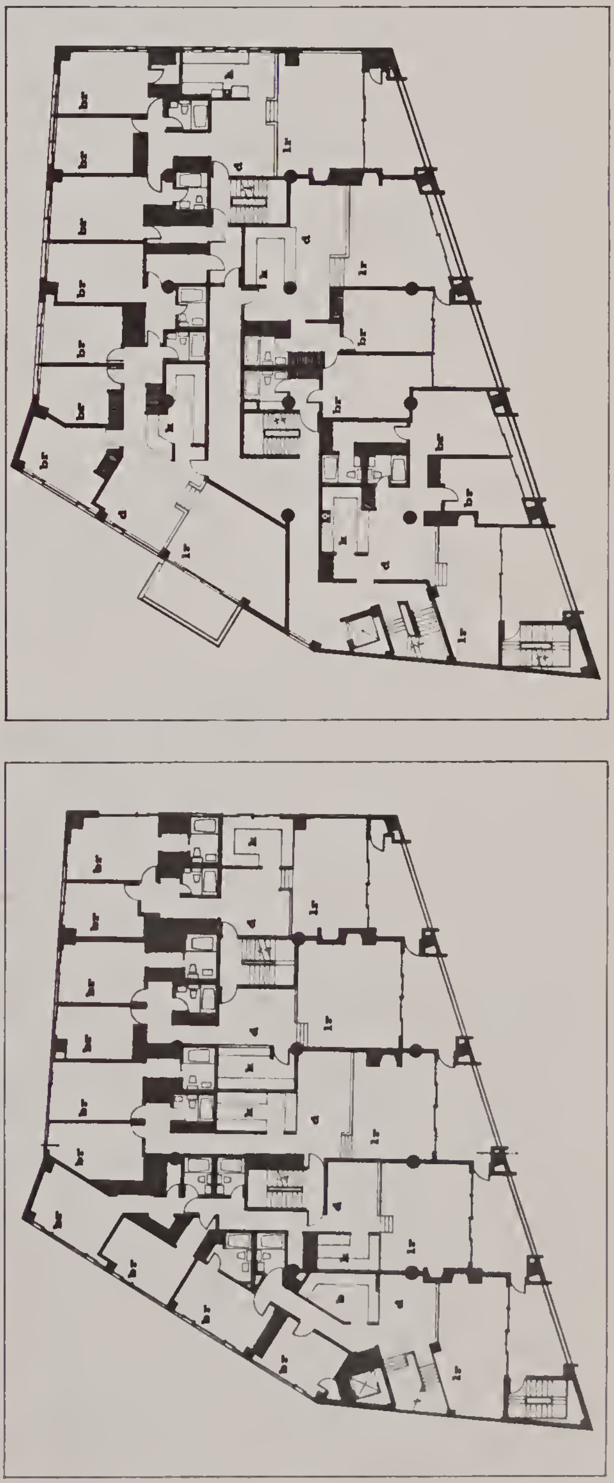
The lesson of the Prince factory conversion is that opportunities for recycling buildings often must be seized when the future of an area is uncertain—in other words, when very few people recognize the possibilities for revitalization. Recycling old buildings requires people with the imagination and courage to proceed with a plan for an area that perhaps no one else believes will work. Indeed, more often than not, successful recycling projects have gone against the prevailing wisdom of most realtors, bankers and developers.

The Prince factory was so sturdily constructed of reinforced concrete that an additional 2½ floors, designed as duplex and penthouse apartments, were added to the original seven. The building also has two levels of enclosed tenant parking and a level of office space.

An interesting design feature is that each corridor in the building serves two floors of apartments. A "skip-stop" elevator serves the bottom two parking levels and the third, fifth, eighth and penthouse floors. To reach an apartment from a given corridor, one may either walk up a half flight of stairs or down a half flight, depending on the level of the apartment. This alternating corridor plan not only increases the amount of leasable space in the building, but it also allows apartment units to span the entire width of the building, providing excellent cross ventilation and views of both the city and the waterfront.

The 12-foot factory ceilings also provided room for raised platforms to be placed in the apartments, with mechanical ducts and piping underneath. Because penetration through the 12-inch thick, heavy concrete slab floors was difficult, placing the mechanical systems on top of the concrete, and covering them with the raised platform, provided an economical solution that created a more interesting room layout.

Prince Building apartments with added floors after conversion from spaghetti factory and warehouse. (Hutchins Photography, Inc.)



Typical corridor floor plan (above) and typical skip-stop floor plan (below). (Anderson Notter Associates, Inc.)

Northbridge Cotton Mill

Location: Downtown, Northbridge

Former use: Cotton mill, built 1846. Later converted to manufacturing

New use: Whitinsville Cotton Mill Apartments, 55 apartments—36 one-bedroom units, 19 two-bedroom units, community space and office space for local Council on Aging

Developer: Schocket/Whitinsville Associates, Boston

Architect: Glaser-deCastro-Vitols Partnership, Boston

General contractor: N. H. Realty/Nebel Heating, Fall River

Construction schedule: Begun June 1976; completed May 1977

Total floor area: 64,495 square feet (gross)
54,000 square feet residential
650–800 square feet/one-bedroom unit
850–1,100 square feet/two-bedroom unit
1,200 square feet community space
800 square feet office space

Cost: $1,100,000 construction
$20,000/unit
$17.06/square foot
$1,750,730 total development
$31,831/unit
$27.15/square foot

Financing: $1,575,000 permanent mortgage from Massachusetts Housing Finance Agency

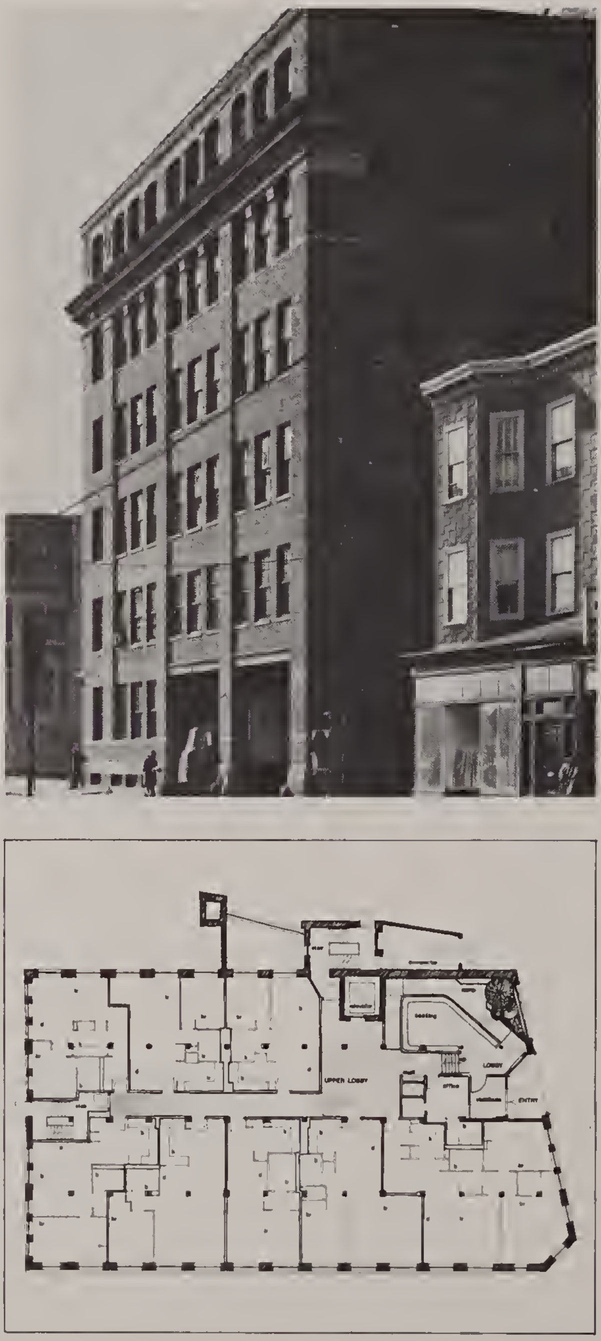
The Northbridge Cotton Mill is an exceptionally beautiful and historic granite mill that has been recycled into 55 apartments. Used for manufacturing after its original use as a cotton mill, the building was no longer capable of attracting industrial or commercial tenants and stood vacant for more than two years before work on its conversion began. The suitability of the structure for housing was enhanced by the scenic qualities of its 2.4-acre site along the Mumford River. Moreover, the building is located in the center of Northbridge, in walking distance of stores, supermarket, post office, town hall, banks and churches. Indeed, it would have been a tragedy not to have preserved and renewed such a remarkable structure. A financial advantage of the mill conversion is that 84 percent of the total floor area became leasable and therefore income-producing, a substantial improvement over most new residential developments.

Construction costs were only two-thirds of the total project cost, i.e., fully one-third of the reuse project was involved in costs *other than* the physical renovation itself—a percentage that should be of interest to communities pursuing the reuse of existing buildings. Additional project costs not normally associated with new construction often result from the need to assume expenses *before* renovation takes place. Such initial investments are necessary to keep a

The Northbridge Cotton Mill converted to the Whitinsville Cotton Mill Apartments. (Center Photo Service)

building in reasonably good condition so that it can eventually be reused. The developer, for example, may have to pay to heat a building during winter, hire a night security guard or pay insurance on a vacant building. These costs need not make a project economically infeasible, but they do require realism from developers (and public agencies). Beforehand, they must commit the resources necessary to realize later savings in construction costs.

An unusual aspect of this project is relevant to other mill conversions. The Northbridge Cotton Mill has two hydro-electric turbines that can be restored to good working order. These turbines have the potential of supplying the building with a major portion of its energy needs. On more than half of the days of the year the rate of flow of the Mumford River is sufficient for the turbines to meet all the energy requirements of the building—space-heating, air conditioning, water-heating, etc. This innovative, desirable and economically feasible approach to energy conservation proved impossible, according to the developer, only because of the prohibitively high "stand-by" charge levied by the electric utility company (over and above the cost of electricity the development might purchase from the utility) for the right to purchase electricity at times when water-generated power is insufficient to meet the building's needs. This stand-by charge in effect nullified the savings that would have been possible by using the renewable, low-cost water power of the river. Although no solution to this corporate obstacle was found for the Northbridge Cotton Mill, it is almost inevitable that the siting of factories and mills along rivers will once again become a significant advantage, resulting in substantial financial and energy savings. Such considerations reinforce still further the arguments in favor of recycling these exceptional and well-sited industrial structures.



The Close Candy Factory, East Cambridge, and first-floor plan showing conversion to apartments. (top, © Greg Heins; bottom, Gelardin/Bruner/Cott, Inc.)

Mill to apartments. One early conversion of a mill to housing took place in Mansfield, Mass., where the old Card Tap and Dye Mills at 150 Rumsford Avenue were converted to 111 luxury apartments (10 studios, 69 one-bedroom units, 31 two-bedroom units and one three-bedroom unit). The project, completed in 1972, was undertaken by developer Sidney Covich, with financing through the New England Merchants National Bank of Boston. Architects for the project were Healy, Healy and Dixon of Framingham, and the contractor was Doran Realty Trust. The construction cost of converting the mill into apartments was $1,312,000, or approximately $11,820 per apartment. The total development cost was $1,454,000, or approximately $13,000 per apartment. Construction costs have risen dramatically since 1972, but even when these costs are adjusted to account for inflation, the Mansfield conversion still suggests inherent economies over new construction.

Especially noteworthy is the large average size of apartments: 1,400 square feet for one-bedroom units and 1,700 square feet for two-bedroom units. Moreover, the building plan allowed for a variety of apartments, "including some duplexes and walk-up alcove or almost balcony areas for bedrooms, penthouses and townhouses with sunken living rooms, large walk-in closets . . . ."[5]

Factory to apartments. The former Close Candy Factory at 243 Broadway in East Cambridge, built in 1892, is being converted to an apartment building. In 1972 the candy factory, which had more recently been used by the Will Scientific Company as an equipment assembly plant and warehouse, had been vacant for more than a year. It was acquired by the Cambridge Redevelopment Authority for demolition as part of its urban renewal plan, but instead the redevelopment authority chose to work with local citizens to pursue a strategy for adaptive use of the building.

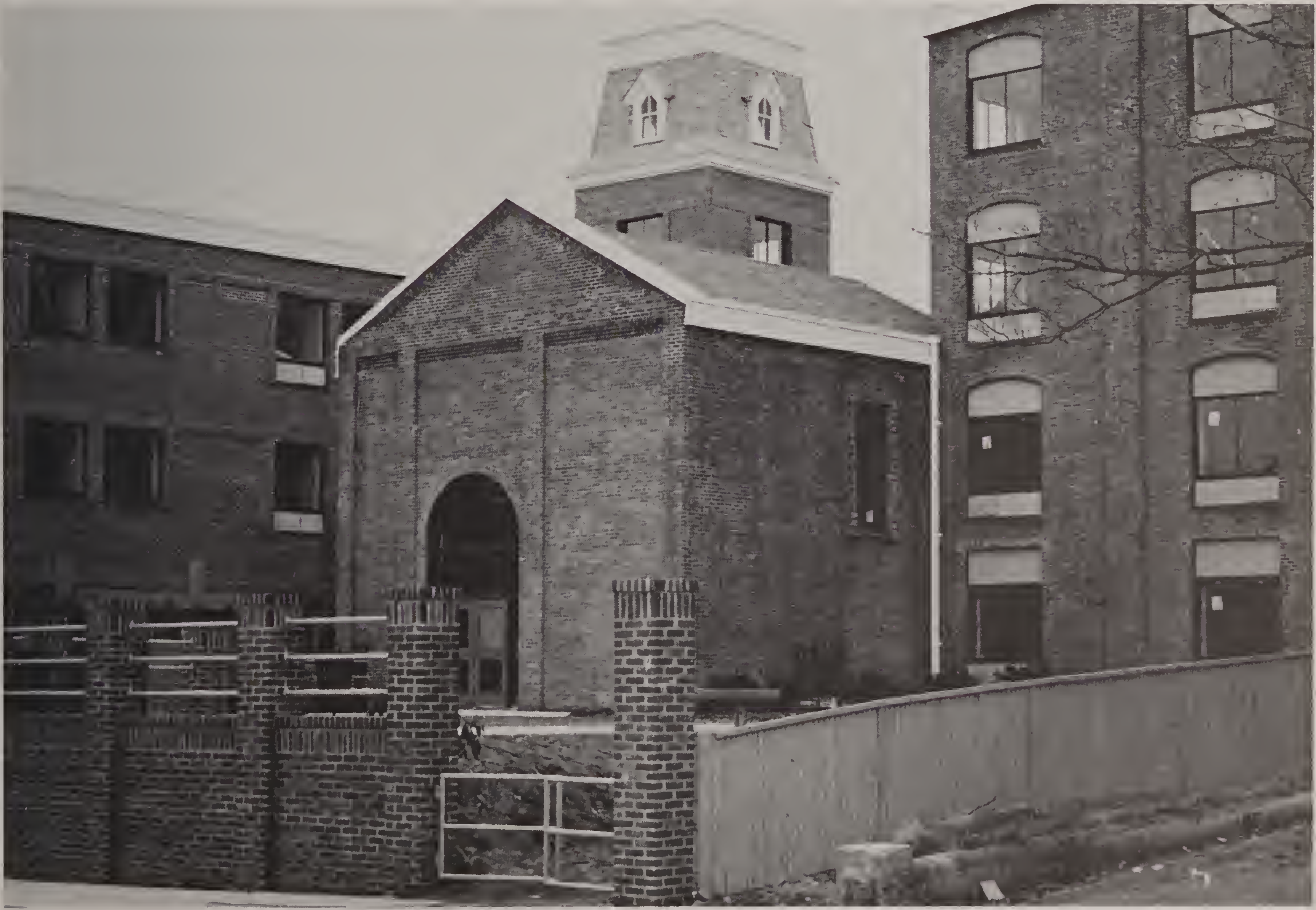
The process of formulating a reuse plan, selecting a developer and obtaining financing took a long time—four years in fact—and construction did not begin until August 1976. During this time, the Redevelopment Authority bore the cost of securing the building, hiring a night guard, heating the building in winter so the pipes would not freeze, etc. The role of the agency in maintaining the building for reuse—in effect "mothballing" it—represented an important contribution to the feasibility of the project; rarely can a private developer afford to bear these up-front costs for such a long period. Another important contribution of the Redevelopment Authority was a substantial lowering of the cost of the property when it was sold to a nonprofit developer. The agency purchased the building and property in 1972 for $300,000 and resold it to the developer for $18,000 four years later.

The architect-developer for the conversion project, selected through a competition conducted by the Cambridge Redevelopment Authority, was Gelardin/Bruner/Cott, Inc., with Park Maynard Realty and the Wellington-Harrington Development Corporation, all of Cambridge.

An interesting design feature of the conversion is that the old truck-loading dock on the side of the building will become the entrance and lobby for the apartments, with an interior ceiling height of almost two stories. The 61 rental apartment units comprise 49 one-bedroom units, six two-bedroom units and six studios. The construction cost of the six-story factory renovation, which contains 60,000 gross square feet of space, is expected to be approximately $1,180,000, a construction cost of $19.66 per square foot. The total replacement value of the project on completion will be $1,700,000. Mortgage financing for $1,500,000 was obtained from the Massachusetts Housing Finance Agency, with a $200,000 equity investment by the developers. Renovation was expected to take 10 months, with occupancy set for June 1977.

Factories to housing for the elderly. In the center of Stoughton, the former Vulcan Shoe Factory has been transformed into an attractive 69-unit housing development for the elderly. The conversion was a state-aided project financed through the Massachusetts Department of Community Affairs, and the units in the development will be owned and managed by the Stoughton Housing Authority. The four factory buildings included a pair of decrepit-looking three-story wood frame structures that were subsequently given new brick exteriors to match the other two brick structures. The boiler room was converted to community space. The large window size in the former factory gives the new apartments a spacious feeling.

The total gross interior floor space in the development is 62,038 square feet, which is utilized as follows: 47,538 square feet residential (apartments, corridors, stairs, elevators); 1,700 square feet community space (laundry, toilets, meeting



The Vulcan Shoe Factory, Stoughton, reused as housing for the elderly. (Pamela Price) room); 9,500 square feet basement; 2,000 square feet storage; 1,300 square feet Housing Authority offices. The total construction cost for the project, which was completed in fall 1976, was $1,212,516—$23,500 per housing unit and $19.54 per square foot. Total development cost was $1,621,500—$27,483 per housing unit and $26.14 per square foot. The architect was Douglas Haring, Haring Associates, Inc., Boston, and the contractor was J. B. Lombardi Construction, Boston.

A former shoe factory in Lowell, once known as the Pilling Mill but now renamed the Francis Gatehouse Mill, has been converted to 90 units of housing for the elderly. The building is located along the Pawtucket Canal, not far from the center of Lowell and directly adjacent to the historic Francis Gatehouse (1850). The location of the old mill is especially well suited to housing, an advantage that will be enhanced in the future when it becomes a part of the new Lowell Heritage Park (see page 114).

Conversion of the Pilling Mill began in April 1976 and was completed on schedule by February 1977. Short-term construction financing for the project was provided by the Massachusetts Housing Finance Agency. On completion, the apartments were sold to the Lowell Housing Authority, which will manage them. The total development cost of the renovation was approximately $2.8 million, or $31,111 per unit.

Although the cost of renovating the old mill for apartments was comparable to the cost of new construction, renovation has produced apartments with quality and distinctiveness unobtainable in most buildings. For example, there are 13 different apartment layouts, and the large windows provide each unit light and a feeling of spaciousness. Moreover, 18,000 square feet of basement storage space—a feature often omitted by necessity in cost-conscious new projects—was obtained essentially for free. The architect-developer for the Pilling Mill renovation was Endevor, Inc., Cambridge.

Also in Lowell, the Massachusetts Department of Community Affairs has committed funds for the conversion of the old Stackpole Mill to 42 units of housing for the elderly. Like the Pilling Mill, the Stackpole is centrally located not far from the downtown area. It is a relatively long and narrow industrial structure (approximately 50 feet by 240 feet) and only a single row of columns supports the center of the building. The architectural plans, prepared by Endevor, Inc., Cambridge, call for placing the hallway off-center to incorporate these support columns in one of the hallway walls. Apartments on the "short" side of the hallway will be elongated accordingly to compensate for their decreased width. The estimated cost of the Stackpole Mill conversion is approximately $1 million. The units conform to the Minimum Property Standards of the U.S. Department of Housing and Urban Development for room sizes, storage space, mechanical systems, etc. In turn, all of the units have qualified for HUD Section 8 rental subsidies. Renovation of the mill for housing began in summer 1977, after completion of construction of a major new interceptor sewer on Stackpole Street. When completed, the units will be owned and managed by the Lowell Housing Authority.

Warehouse to museum. In Boston, an 1890s wool warehouse along Boston's Fort Point Channel will be completely renovated to house the Children's Museum and the Museum of Transportation. The renovated warehouse, in addition to allowing a major expansion of the exhibits and facilities of both museums, will also include associated commercial facilities. Recycling built resources is not a new idea for the Children's Museum; this warehouse renovation is in keeping with its 42-year tradition of adaptive use. Since 1935 the museum had occupied the 1895 Robert Morse house on the Jamaica Way in Boston, and as it expanded had adapted adjacent structures for museum use.

[1] Anthony Yudis. "Home, Sweet Home In An Old Mill," *Boston Sunday Globe*, September 24, 1972. See also discussion on page 60. [2] The use of old mills for economic development is discussed further in the Lowell and North Adams sections of the Strategies for Community Renewal chapter, pages 114, 118. [3] Michael Robinson. "Boston's Piano Factory Urban Rehab: $10.50 a Sq. Ft.," *House & Home*, February 1975. It should be added that the "conventional rehab" referred to by Robinson is still substantially less expensive than new construction. [4] Ibid. [5] Yudis. "Home, Sweet Home In An Old Mill."

The Upton Inn apartments, formerly a boardinghouse for workers in a nearby Upton factory. (R. Wendell Phillips and Associates)

Only in recent years, as housing shortages have increased amid skyrocketing costs for new housing, have communities seriously recognized the potential for reusing their existing housing stock. In some areas the most pressing need is to bring about a more balanced housing supply. In others, the total supply of housing has to be substantially increased to meet population increases and the rising number of small households—single people, childless couples, the elderly, etc.

Efforts to lessen the housing shortage most frequently have taken the form of new construction. This preoccupation with traditional methods of housing construction can lead communities to overlook the possibility of obtaining needed housing through rehabilitation or conversion of nonresidential structures. Moreover, thinking only in terms of increasing the supply of new housing avoids the equally urgent task of minimizing losses in the existing housing stock through deterioration, abandonment and demolition.

It is ironic that, despite major efforts at new housing construction, the number of available housing units in some cities and towns has not appreciably increased—the amount of new construction is almost completely offset by losses in existing housing. New York City frequently provides the ultimate measure of comparison for urban statistics. The executive director of the Association of Neighborhood Housing Developers of New York City, Robert Schur, estimates that New York City is losing 30-40,000 apartments each year because of lack of attention to rehabilitation and conservation of existing housing and a myopic concern for new housing construction.[1] Schur points out that, in particular, an emphasis on new construction can be self-defeating and have an especially destructive effect on existing housing in center cities with stable or even declining populations. In such areas, new construc-

tion tends to accelerate the shift of investment funds away from maintenance and rehabilitation. Certainly such facts support the necessity of moving the housing market toward an equilibrium in which rehabilitation and new construction are finally brought into balance.

Homeowner Rehabilitation Programs

Some cities have used community development block grant funds from the U.S. Department of Housing and Urban Development to establish programs that encourage homeowners to rehabilitate their properties.[2] In Baltimore, Md., owners can borrow money from the city at 7 percent interest to improve their houses. The Baltimore program, known as Rehabilitation Environmental Assistance Loans (REAL), permits loans of up to $17,400 per dwelling unit, for up to 20 years. In Boston, property owners can receive a direct cash rebate of as much as 20 percent of the cost of improvements they make to their properties. The purpose is the same as that of the REAL program—to encourage the maintenance and improvement of the existing housing stock. In Holyoke, a similar program, also using community development block grant funds, is part of the city Neighborhood Improvement Program, which provides homeowners with reduced interest loans and grants of up to 30 percent toward the cost of home improvement, depending on a homeowner's taxable income. An important aspect of these and other programs designed to encourage rehabilitation is the assurance that property owners making improvements will not be penalized by increased property taxes.

Most of the rehabilitation programs mentioned have been restricted to one, two or three-family, owner-occupied structures and therefore have not offered incentives to upgrade rental structures or multifamily structures with four or more units. Another limitation of these programs has been that maintenance costs are considered ineligible for reimbursement. While this exclusion may perhaps be understandable, it is also true that lack of maintenance is often the factor that contributes most to the need for major repairs and renovations later. Fault can also be found with such programs for not focusing on specific areas; the diffusion of grants throughout an entire city tends to weaken the impact on any given area. Such programs also tend to favor those who own property over those who do not and thus tend to give the most direct benefit to those who are comparatively well-off. Despite their weaknesses, these programs do represent a change in attitude and a growing awareness of the need to maintain existing housing in old neighborhoods.

Multistructure Projects

Other approaches to preserving and reusing old residential structures also can be found. Three of the cases cited in this chapter illustrate successful renovations of groups or blocks of residences. Such intensive, multistructure projects have substantial economic advantages. Architect Charles Tseckares of Boston has suggested, for example, that renovating a relatively large number of units can result in substantially lower costs than renovation of a small number of units. Tseckares attributes these economies not only to bulk purchasing of materials, but also to the reduced set-up time per unit obtainable through multiple-unit renovation. Workers can renovate one unit and begin work on another with a minimum of delay and without having to reorganize and relocate building equipment and materials. Unified and concentrated rehabilitation, involving most if not all of the housing units in a given area, also has a strong visual and economic impact that in turn can have a dramatic influence on surrounding areas.

Hotels and Motels

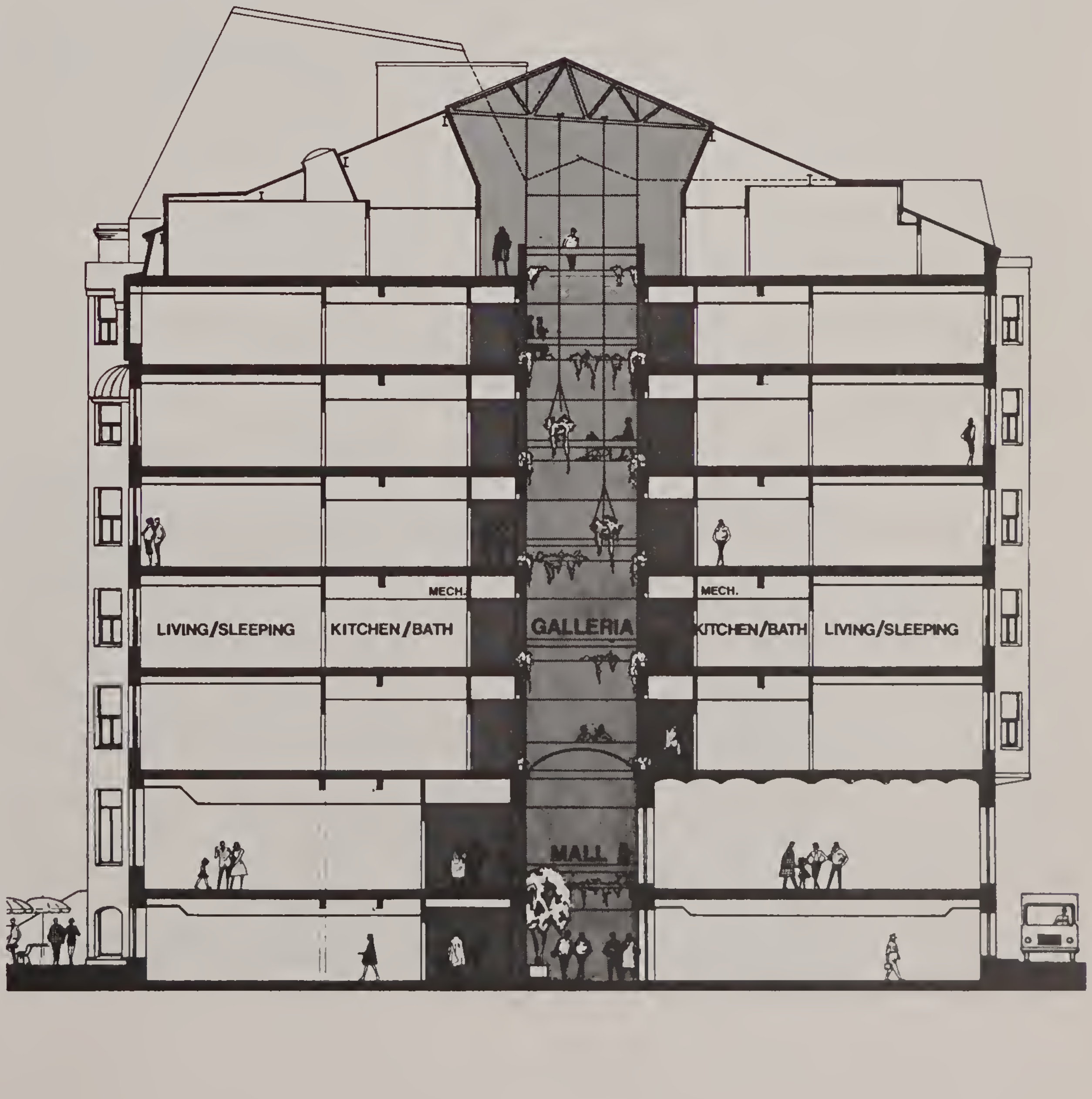
Downtown hotels represent another frequent opportunity for reuse, because in many instances continued operation as hotels is no longer economically feasible. In some cases, hotels have suffered from the general decline of the communities in which they are located. But equally as often downtown hotels have been undermined and jeopardized by new highway patterns that have favored the construction of new motels in outlying areas, such as at the interchanges of major limited-access highways. Faced with economic demise because of changing land use and travel patterns, it is often necessary to find new ways to use these structurally sound and often architecturally noteworthy hotel buildings.

In Boston, with its strong demand for hotel accommodations, a deficit of hotel rooms has led to the recent construction of a 500-room hotel across the Charles River in Cambridge, and construction of two other large new hotels in Boston itself is planned. Yet, even in this otherwise prospering downtown area, established old hotels such as the Hotel Madison, and even for a time the Statler Hilton Hotel, have been forced to close. In an editorial on the closing of the Statler Hilton in December 1976, the *Boston Globe* commented: “The Statler died largely because it was an aging facility in a business that demands—perhaps unfairly—a sense of newness. . . .”[4] The old hotel was purchased by a Boston businessman, renovated and reopened in spring 1977 as the Park Plaza Hotel.

In a number of old Massachusetts cities and towns economically troubled hotels have been successfully converted to year-round housing. As part of its increased priority of funding housing projects that reuse existing structures, the Massachusetts Department of Community Affairs has funded a private feasibility study to determine if the 146-year-old Curtis Hotel in Lenox could be adapted for housing. This historic hotel had suffered economically in recent years, especially because of the numerous motels that had sprung up along the major state highway bypassing the town center. The conclusion of the feasibility study was that it was both practical and desirable to convert the 90-room hotel into 60–65 units of housing for the elderly. However, it does not appear that this reuse option will be exercised, although it remains a realistic alternative should the present use of the building falter.

It should be noted that although conversion of hotels to residential units (transient occupancy to permanent occupancy) appears on the surface at least to be a natural modification, it actually involves major and complex interior demolition and reorganization. In fact, the work required to convert a hotel to housing is more extensive than is usually required to transform a school building into housing. Classroom walls are usually hollow partitions containing few, if any, pipes or mechanical systems and can therefore be removed quite easily. Rehabilitating hotel space for apartments, on the other hand, requires a more time-consuming form of conversion—dismantling plumbing and mechanical systems contained in hotel walls, removing up to two-thirds of the bathrooms in the building, redirecting plumbing to connect with newly installed kitchens, and organizing these old and new plumbing and mechanical systems to conform to desired apartment layouts.

Even though the conversion process is relatively complicated, adapting a hotel to apartments is still more economical than constructing an equal number of new apartments. Similarly, like other building types, residential structures of all varieties need not be demolished simply if their original use is no longer feasible or desirable. Conversion to a totally different use, as is discussed in the case study of the Southbridge Credit Union in this chapter, may be more economical than constructing a new building for the purpose.



Transverse section of the Hotel Vendôme, Boston, showing new use as condominiums, with shopping mall on lower floors. (Perry, Dean, Stahl and Rogers, Inc.)

Hadley Falls Company Mill Housing

Location:	Center Street, Holyoke
Former use:	Three U-shaped rows of housing for mill workers, built 1848 by the Hadley Falls Company
New use:	The Hadley Mills Townhouse Project, 24 two-family, attached townhouses—48 dwelling units
Developer:	Old Holyoke Development Corporation, Holyoke
Architect:	Carl Warfield, Springfield
General contractor:	E. A. Garlia, Longmeadow
Construction schedule:	First row begun July 1973; completed January 1974. Second row begun March 1974; completed August 1974. Third row begun October 1975; completed March 1976
Total floor area:	57,000 square feet (gross) approximate 2,400 square feet/two-family structure
Cost:	$835,000 construction $261,000 first row $256,000 second row $318,000 third row $35,000/two-family structure $17,396/unit $14.50/square foot $920,000 total development $85,000 acquisition $16.14/square foot
Financing:	Funding obtained initially from Holyoke Model Cities program and later from U.S. Department of Housing and Urban Development community development block grant funds

The Old Holyoke Development Corporation is a quasi-public nonprofit corporation initially formed with funds from the Holyoke Model Cities program. The corporation was organized to function as a relatively independent development corporation with its own board of directors comprising citizens, local bank representatives, public officials and key business leaders. After it received its initial "seed money," it has become largely self-sustaining. In addition to receiving public funds, the private, nonprofit nature of the corporation also enables it to receive tax-deductible contributions and grants from nonprofit sources.

The Hadley Mills Townhouse Project was the first rehabilitation undertaken by the Old Holyoke Development Corporation. The townhouses were in an old industrial area surrounded by decaying mills and factories, one that had already seen considerable demolition. Like so many other housing units in Holyoke, the 120-year-old mill workers housing was nearing the point of dilapidation and abandonment. In short, it was an area in which private banks were hesitant to lend money.

Renovation of the mill housing

Renovated houses on Center Street in the Hadley Mills Townhouse Project. (Old Holyoke Development Corporation)

was viewed as a way to begin to reinstill some pride in the area, at a price current residents of the city could afford. A subsidiary goal was to encourage home ownership in a neighborhood characterized by high absentee ownership that contributed to increasing neglect and disinvestment.

Because the townhouses were duplexes they were especially attractive to potential buyers. Each townhouse has three floors and two housing units, with a complete one-bedroom unit on the first floor and a three-bedroom unit on the second and third floors. The third-floor attic level accommodates two bedrooms and a full bathroom. These two units share a common entrance and vestibule. Thus, a person or household owning one of the townhouses can choose to occupy one of the units and rent the other unit, receiving regular income to offset mortgage payments.

The Hadley Mills complex contains three rows of townhouses. The first two rows were renovated with funds provided by Model Cities. With the demise of this program, funds for renovating the third row of townhouses were provided through the city's federally funded community development block grants.

To make purchase of the townhouses affordable and even more attractive, their sales price was reduced from $35,000 (the cost of each townhouse) to $24,500. In other words, the city took a loss by selling the structures for $10,500 less than it cost to acquire and renovate them. However, the city stands to more than recover its investment, because property taxes on the rowhouses have tripled as a result of the renovation. Moreover, the development corporation has pledged to contribute a total of $200,000 toward public improvements in the neighborhood ($40,000 a year for five years). The money is to come from profits earned by its various development projects. As of October 1976 the development corporation had contributed $80,000 toward the city's share of the cost of constructing a neighborhood park and a new elementary school in the area.

In the course of the project, the Hadley Mills Townhouses and two nearby rows of townhouses not owned by the Holyoke Development Corporation were accepted for listing in the National Register of Historic Places. This designation has allowed the corporation to apply to the Massachusetts Historical Commission for a 50 percent National Park Service matching grant to restore the exteriors of the nearby rows of townhouses to reflect the same renovated appearance as the other three rows. Under the grant formula, 25 percent of the cost of the facade improvements will be paid for by the corporation (even though it does not own them), with the remaining 25 percent paid by the owner of the buildings.

Holyoke's efforts at rejuvenating a dying core area would appear to demonstrate that renovation of existing structures is more realistic and achievable than total new development. Large tracts of land in Holyoke have been cleared as part of the city's urban renewal process, but much of it remains vacant. The mere presence of vacant developable land in the center of the city has not been sufficient to create a demand for new development. And what has been built has not always been successful either economically or aesthetically.

In the Hadley Mills Townhouse Project, the existing structures, spaces and street system were allowed to define the dimensions of the new development. The Old Holyoke Development Corporation was able to create a new and attractive housing development by using sound old buildings. In doing so, it helped to strengthen the community's pride in its origins and its faith in the future.

Cleaves Court Apartments

Location: Cleaves Court, Columbus Avenue near Egleston Station, Boston

Former use: One and two-bedroom brick apartments in two residential blocks, built c. 1898

New use: Cleaves Court, 36 renovated one, two and three-bedroom apartments overlooking a central pedestrian courtyard

Developer: Anthony Capodilupo, Boston

Architect: Bastille-Neiley, Architects, Boston, with George Stephen, architect

General contractor: Powells' General Contracting Company, Inc., Boston

Construction schedule: Begun December 1971; completed winter 1974

Total floor area: 36,000 square feet (gross) approximate
30,636 square feet net leasable

Cost: $509,000 construction
$14,138/unit
$14.14/square foot
$735,300 total development
$20,425/unit
$20.42/square foot

Financing: Construction and permanent financing from Massachusetts Housing Finance Agency

One of the unique features of the Cleaves Court project was the creation of a pedestrian terrace between the apartment blocks in the former street area, with vehicular access and parking relocated to the rear of the two facing residential blocks. Improvements—landscaping, planting, sculpture and redwood benches—were significant elements in creating an attractive and cohesive environment symbolic of revitalized residential development. The structure had suffered deterioration and increasing vacancies, and the housing units were close to being lost.

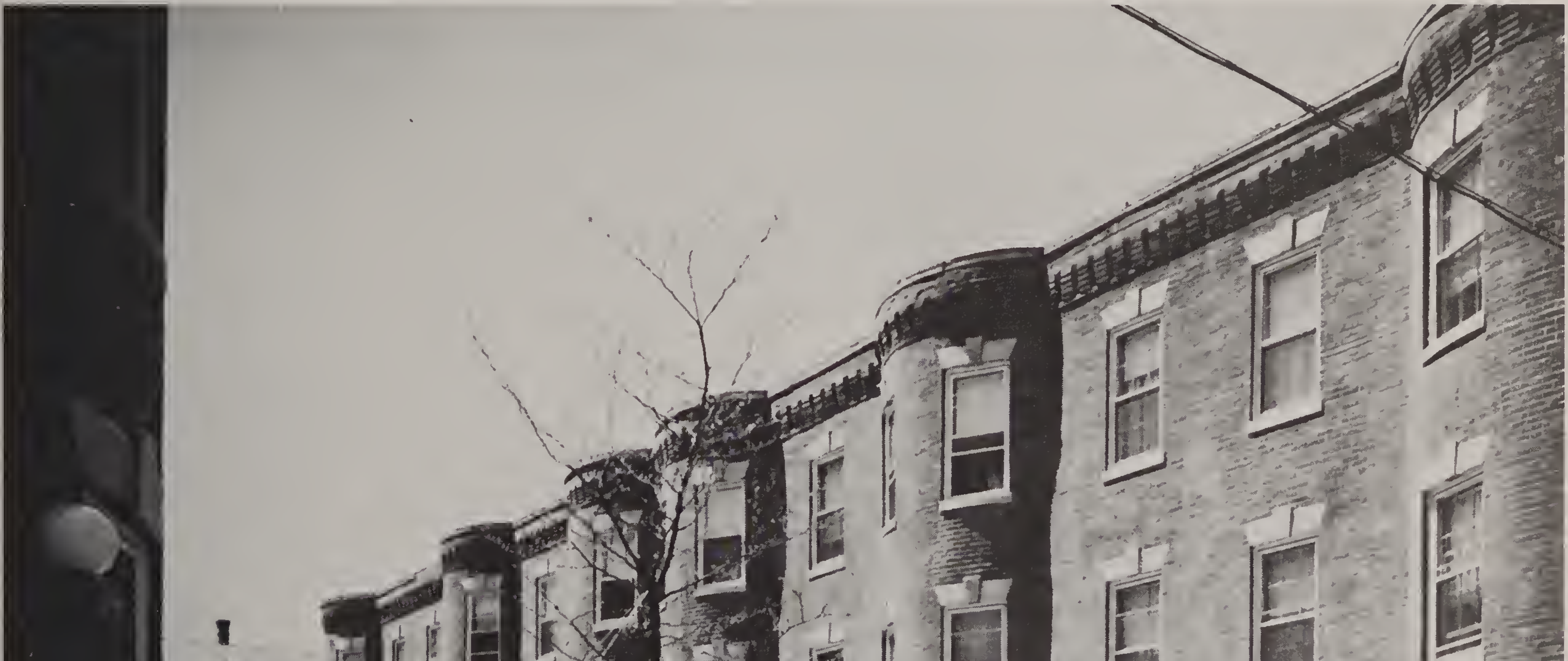
Because the street in this case was not a city street, but legally only a private way, the cost of creating the pedestrian mall was paid for by the developer as part of the direct project cost. In cases involving city streets, however, municipalities might consider subsidizing similar types of improvements to encourage private investment in rehabilitating adjoining structures. For example, public investment in relocating streets and providing park space was a major factor in determining the feasibility of renovating Boston's Mercantile Wharf building for housing. In other cases as well, commitment of public funds to improve publicly used areas may be necessary to generate interest on the part of private investors and local financial institutions.

The arched, rhythmic brick facades of the two apartment blocks were cleaned and restored, but extensive interior renovation was necessary to make the units more modern and functional. Room layouts of the apartments before renovation were awkward and undesirable and were therefore altered substantially; each apartment gained a 25-foot-deep living-dining room.

Before the renovation almost all of the apartments at Cleaves Court were two-bedroom units. Because of this undesirable lack of choice and diversity, the interior renovation was directed toward providing an in-

Cleaves Court apartments facing the pedestrian terrace created by closing a street. (Bastille-Neiley, Architects)

creased number of one and three-bedroom units. By breaking through the common wall separating adjoining two-bedroom units, and by taking a bedroom from one of the units and connecting it to the other in an L-shaped configuration, a wider range of housing types was achieved. Such a modification of interior space serves to underscore the flexibility inherent in renovating existing buildings for housing.



Linwood Court Apartments

Location: Broadway, Columbia and Market Streets, Cambridge

Former use: A block of 8 frame residential structures, built 1903–16—3 three-deckers, 2 four-deckers, a two-story frame barracks-style structure, an attached two-story frame townhouse and a single-family house

New use: Linwood Court Apartments, a residential development of 45 housing units—2 efficiencies, 11 two-bedroom units, 2 four-bedroom units, 2 five-bedroom units and 28 three-bedroom units

Developer: Wellington-Harrington Development Corporation, Cambridge

Architect: R. D. Fanning, Architects, Inc., Boston

General contractor: James O. McFarland, Inc., West Roxbury

Construction schedule: Begun April 1975; first occupancy November 1975; completed December 1975

Total floor area: 55,000 square feet

Cost: $1,181,700 construction
$26,260/unit
$21.48/square foot
$1,912,879 total development
$42,508/unit
$34.78/square foot

Financing: Construction and permanent financing, covering 100 percent of the cost, from Massachusetts Housing Finance Agency. Approved as a 121A project by city of Cambridge

The rehabilitation of Linwood Court involved the cooperation of Cambridge city agencies, the local historical commission and the Massachusetts Housing Finance Agency with the Wellington-Harrington area nonprofit development corporation. The effort earned the project one of the nine Project Design Honor Awards given by the U.S. Department of Housing and Urban Development in 1976.

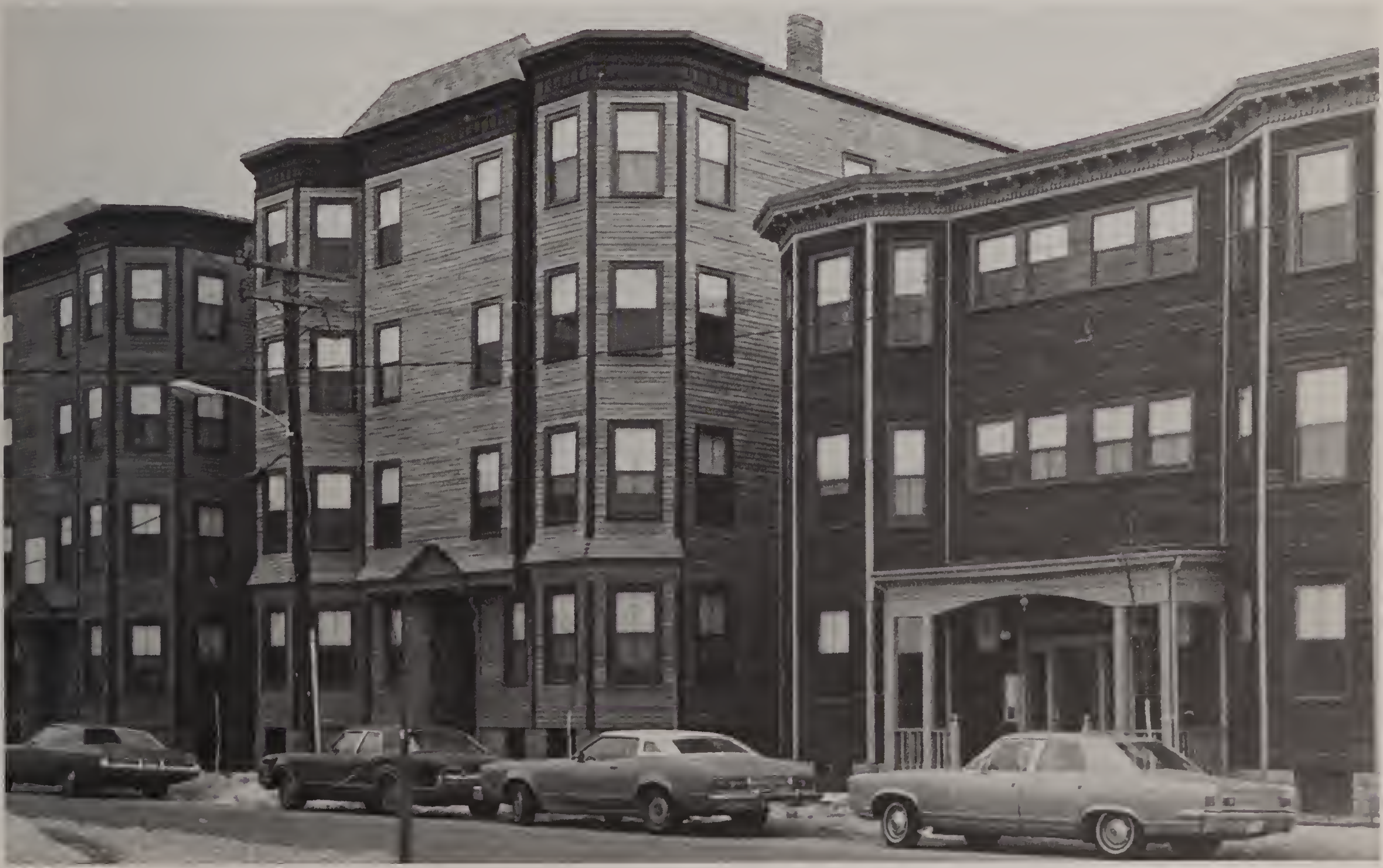
The dramatic success of Linwood Court has relevance and applicability to practically every city and town. The project demonstrates the desirability and feasibility of retaining relatively ordinary and neglected residential structures. It also serves to show that widely differing building types, styles and colors can be related to one another in highly attractive and functional ways. Using different stains for clapboard and varying colors for the trim of different buildings helped to avoid the homogeneity and lack of personality that so often needlessly characterize large projects undertaken by a single developer.

A key role in the Linwood Court project was played by the Cambridge Redevelopment Authority. Without the enlightened support and crucial financial subsidies provided by the agency, it is unlikely that Linwood Court could have been possible. The authority acquired and assembled the various land parcels involved at a cost of $426,000 and then sold the entire project site to the nonprofit developer for only $21,600. In addition to this major subsidy, the Cambridge Redevelopment Authority paid for many public improvements to the area surrounding the project—new

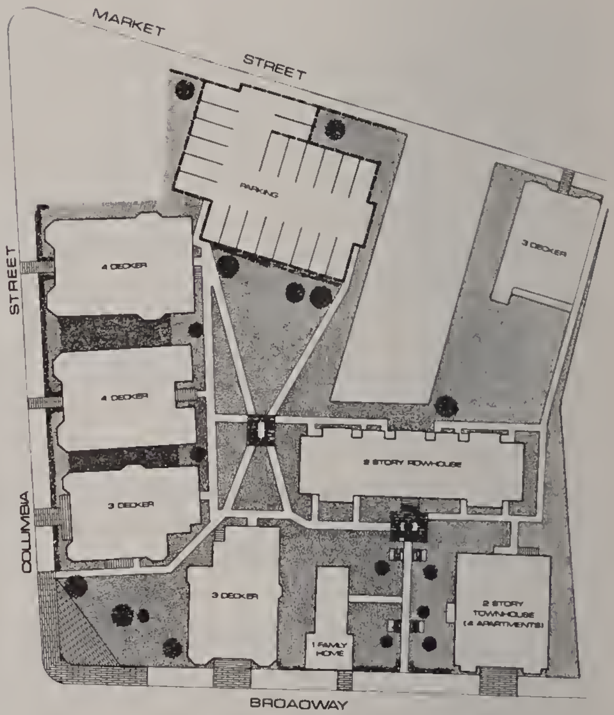
Linwood Court three and four-decker rehabilitated units. (Cambridge Historical Commission)

sidewalks, tree planting, etc.—plus the cost of new sewer and water connections up to the property lines. These public expenditures amounted to approximately $75,000. In short, the Cambridge Redevelopment Authority did all the things that redevelopment authorities frequently do to facilitate needed development—all except demolishing existing buildings.

Linwood Court was not an inexpensive project by any means. The total amount financed by the Massachusetts Housing Finance Agency was $1,411,179, or more than $31,300 per dwelling unit. Moreover, the costs borne by the Cambridge Redevelopment Authority must be added. All three, four and five-bedroom units, 70 percent of all the units in Linwood Court, were provided with 1½ bathrooms, and this tended to increase unit costs somewhat. However, it should be noted that although the cost per dwelling unit is high, the cost per square foot is not unreasonable. The high unit costs are partly a reflection of the extremely large size of the apartments, approximately 1,220 square feet. Linwood Court is a prime example of an instance where the excellence of the final product justifies the extra expense. Apartments in Linwood Court are unusually spacious compared to typical new apartments; they also offer a high degree of variety and individuality, as well as such amenities as large windows, high ceilings, ample closet space and large rear porches. Twenty-two of the 45 units in Linwood Court are leased to the Cambridge Housing Authority, which subsidizes rent paid by low-income residents.



Site plan unifies the block of varied housing structures at Linwood Court. (Richard Khan and Paul Johnson)



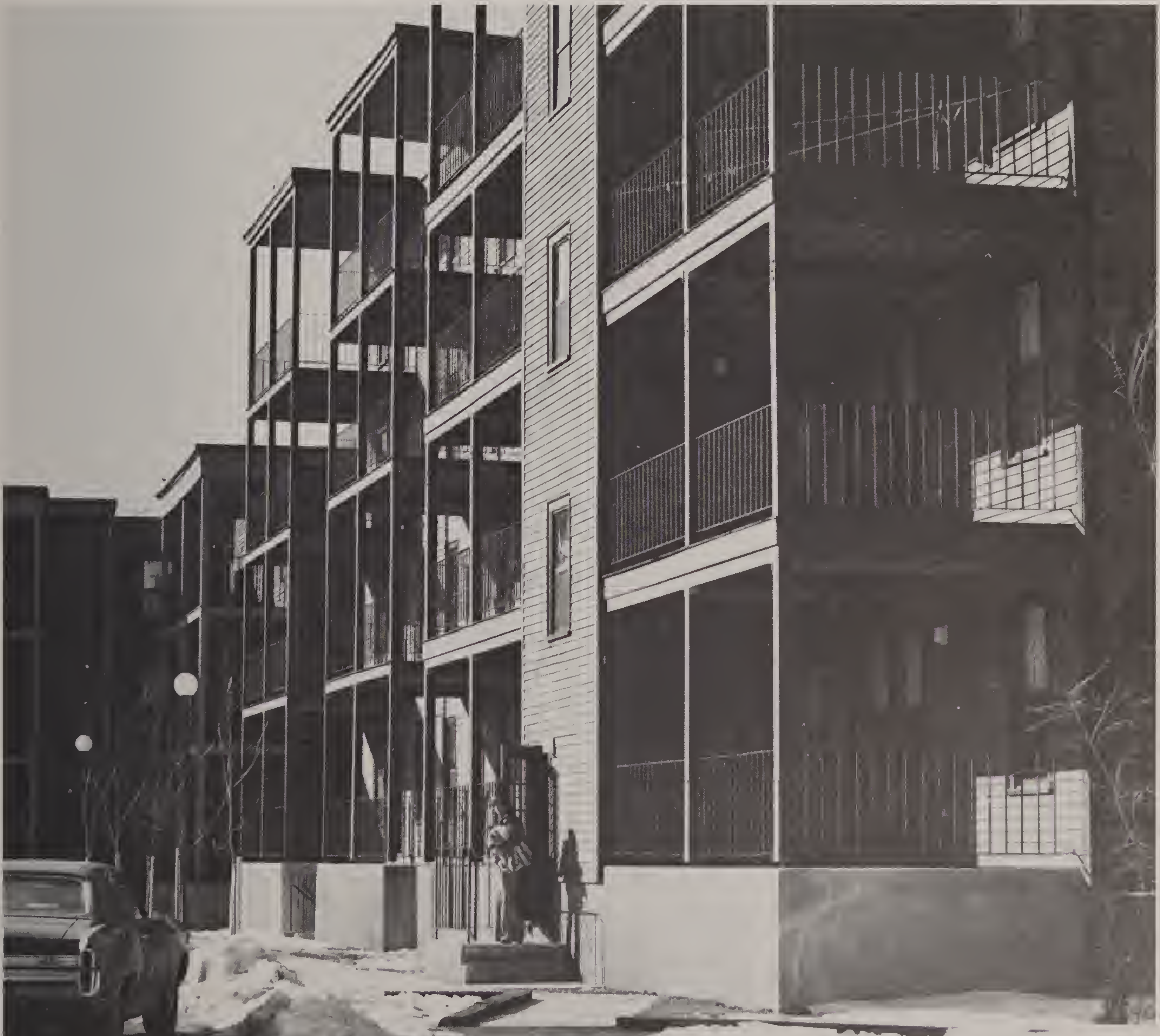
Linwood Court is convincing evidence that renovation is worth undertaking even when it costs more than new construction—at least in cases where what will be achieved is superior in quality and impact to what might have been attained through new construction. Considering the redevelopment authority goal of stabilizing and revitalizing that part of Cambridge and Massachusetts Housing Finance Agency interest in providing the best possible mixed-income family housing, the investment in Linwood Court probably was the most successful and productive solution possible. No comparable investment could have achieved such long-term benefits to those fortunate enough to reside in the new housing or to the residents of the surrounding area.

It is worth emphasizing that much of Linwood Court's positive overall effect in supporting and enhancing neighborhood rehabilitation is a direct result of its compatibility with the structures that typify that part of Cambridge. Linwood Court has set an example for owners of similar structures in the neighborhood, because what has been done there clearly can be replicated. Moreover, residents viewing Linwood Court are able to feel good about their neighborhood and to see it improving. Too many redevelopment projects make such a dramatic visual impact and represent such a departure from surrounding building types that they heighten the contrasts and deficiencies in a neighborhood. In the case of Linwood Court the opposite approach was taken; the change, although concentrated on one block, was gradual and incremental and served to emphasize the inherent value and potential already in an old neighborhood.

The units in Linwood Court are in almost every respect (except for major elements of the structure itself) new housing units, with entirely new heating and electrical systems, new walls, new ceilings and new windows. The disparate qualities of the housing types have been unified through a coherent site plan providing landscaped open areas, play areas for children and on-site parking—all the amenities normally associated with much newer housing developments.

For the city of Cambridge, the units at Linwood Court also represent new housing because the structures were almost completely vacant before renovation, and for all practical purposes were no longer part of the Cambridge housing supply. The residences had reached final stages of decay, had been condemned and were slated for clearance. That demolition was avoided is a tribute to the city's determination to meet the needs of local residents. The city knew that new housing constructed on the site would be unlikely to include many three and four-bedroom units, the principal need in East Cambridge, whereas the city realized that the existing structures offered space for such large rental units. Realism and practicality were also important factors, because it is entirely possible, even if the boarded-up buildings had been razed, that the site would have remained vacant for years. The choice to renovate dilapidated and condemned frame structures is applauded today, but it was a difficult and controversial decision for Cambridge at the time.

Rear view of Linwood Court frame residences after renovation. (Cambridge Historical Commission)



Southbridge Residence

Location: 205 Main Street, Southbridge

Former use: Private, single-family residence, built 1865

New use: Southbridge Credit Union, with drive-in tellers' window

Developer: Southbridge Credit Union

Architect: Bastille-Neiley, Architects, Boston

General contractor: Associated Construction Company, Hartford, Conn.

Construction schedule: Begun November 1973; completed August 1974

Total floor area: 8,000 square feet (gross)
4,657 square feet commercial use

Cost: $180,000 total development
$22.50/square foot

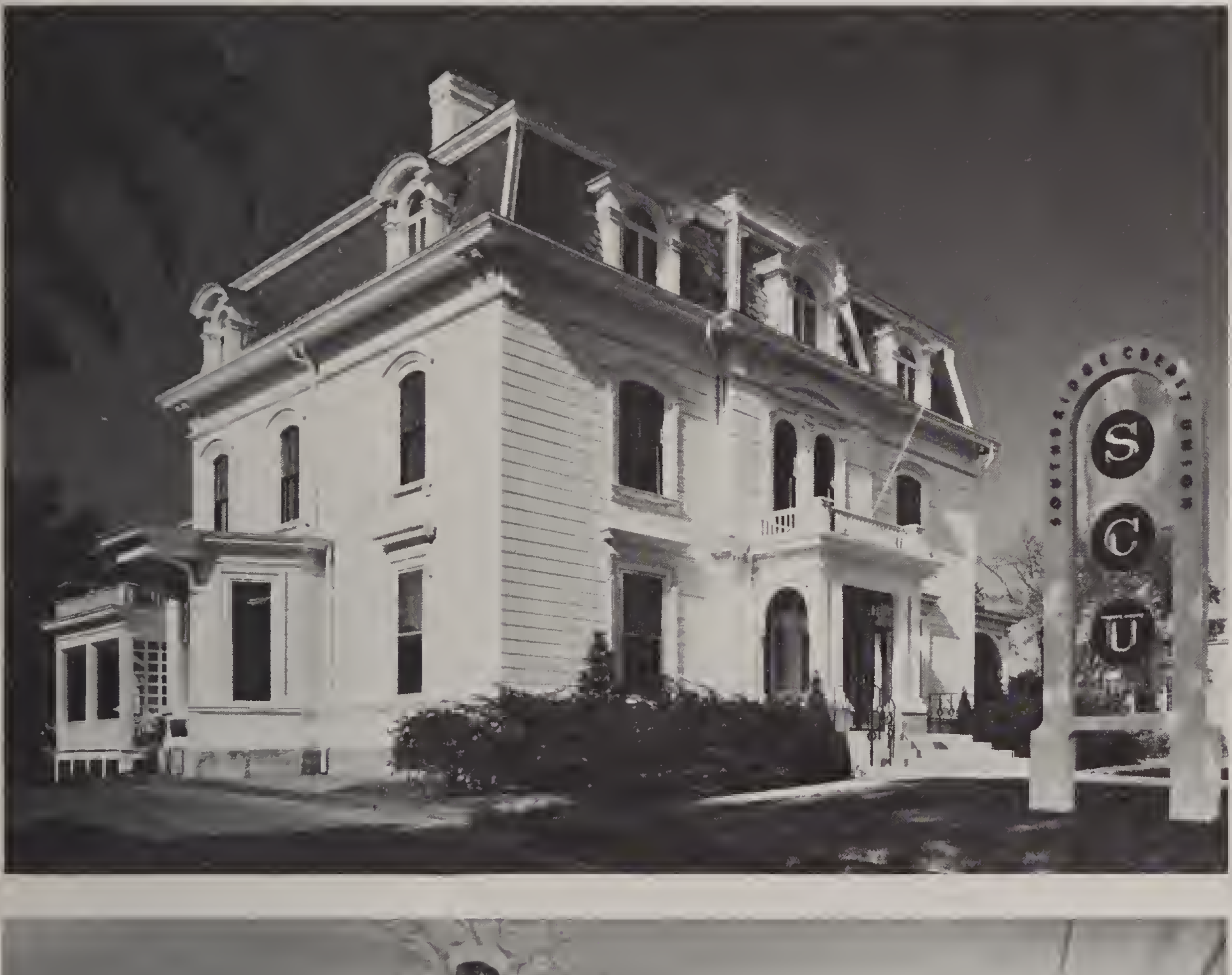
Financing: Private conventional financing

Many residential structures are razed, often needlessly, when adjacent land uses change. An old house on the edge of an expanding business zone, for example, may be demolished to allow for some new commercial use. In the case of the Southbridge Credit Union this did not happen, even though the directors of the bank had initially contemplated demolishing the 1865 house to allow construction of a new bank building on the site. A study by Bastille-Neiley, Architects, indicated that, while the cost of adaptation would be about the same as that of constructing a new building, the old house could be adapted easily to use as a bank; moreover, the architects concluded, the detail and character of the house would make possible the creation of a highly impressive banking facility.

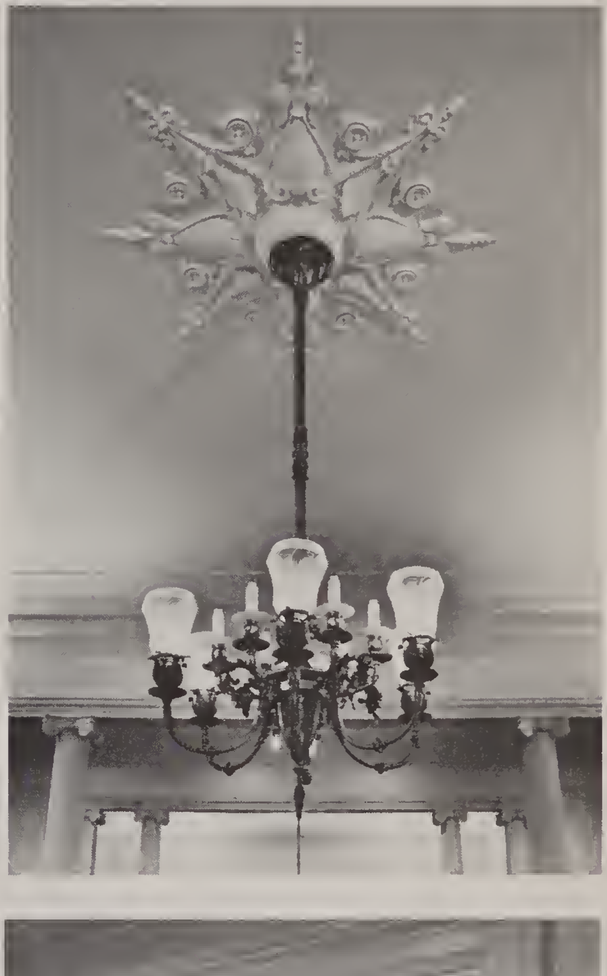
The conversion emphasized the retention of the architectural elegance and detailing of both the exterior and interior. The only exterior changes involved removing a large porch, glassing-in the front entry and converting a bay window to a drive-up teller station. Interior changes focused on retaining the house's period elegance by restoring and recreating many of the details such as the marble mantels, gilt mirrors, brass chandeliers and walnut stair and trim. No skilled plasterer could be found to reproduce the plaster cornices, so the cornices were recreated out of wood using standard molding from a catalogue. This match of old and new is enhanced by the addition of period antiques.[5]

Since successfully converting the fine old frame residence to an elegant bank, the Southbridge Credit Union has received enthusiastic local praise and recognition. Its deposits have risen more than 25 percent, due in large part, it believes, to the unique image and attractiveness of the building and its landmark status in the community. In turn, the town government of Southbridge is delighted that the house could be preserved, as the value of the property and the taxes have increased dramatically, as much as they would have under new construction. In the long run, the recycled house will have a much more enduring and beneficial effect on the town than would an alternative form of development. This conversion demonstrates that careful development and change can occur without sacrificing a community's special heritage and character—and that even small structures such as this single-family house are good candidates for adaptive use.

Southbridge Credit Union exterior showing drive-in window and restored interior. (top, Bastille-Neiley, Architects; bottom, ©Steve Rosenthal)



The chandelier and entrance to the credit union, features retained from the original residence. (©Steve Rosenthal)



Springfield Brownstones

Location: Central Street, Springfield

Former use: 43 attached brick and brownstone residences, built 1875 (Benjamin F. Farrar, builder) and a grocery store

New use: Northern Heights Apartments—128 units in renovated structures, 20 units in a new building on the site of houses destroyed by fire and a day-care center in the grocery store

Developer: Joseph Carabetta Enterprises, Inc., Meriden, Conn.

Architect: Design Associates, Meriden, Conn.

General contractor: Joseph Carabetta Enterprises, Inc., Meriden, Conn.

Construction schedule: Begun February 1974; completed August 1975

Total floor area: 177,851 square feet
- 500 square feet/efficiency
- 650 square feet/one-bedroom
- 850 square feet/two-bedroom
- 1,150 square feet/three-bedroom
- 1,350 square feet/four-bedroom

Cost: $3,088,329 construction
- $20,867/unit
- $17.36/square foot

$4,569,793 total development
- $473,010 acquisition
- $30,877/unit
- $25.69/square foot

Financing: Construction and permanent financing from Massachusetts Housing Finance Agency

By emphasizing the historical character of this entire city block of rundown townhouses in Springfield, a developer specializing in new residential construction was able to help assure the success of the project. Carabetta Enterprises chose to undertake the major rehabilitation effort, now known as Northern Heights, because of its favorable location in the South End only a short distance from downtown Springfield. An added inducement was the basic design and "aesthetic value" of the 100-year-old row, indicates Joseph Carabetta. "We felt that rehabilitation would help maintain the traditional flavor of the neighborhood, as well as preserve these historic buildings."[6]

When the brick and brownstone structures were constructed in 1875, Springfield was a prosperous and rapidly growing city. Despite the extensive amount of housing built to meet the new population's needs, both city officials and private contractors assured that the developments followed the new urban planning principles espoused by landscape architect Frederick Law Olmsted and others. Springfield citizens were proud of the neighborhoods being built in what was then considered the suburbs.

Part of the row of brownstones renovated as the Northern Heights Apartments. (Steve Van Meter, *The Springfield Sunday Republican*)

The public marketing that accompanied the renting of the Northern Heights Apartments emphasized this unique heritage. A brochure prepared by the developer was entitled "Northern Heights Revisited": "Over a century ago, when Ulysses S. Grant was President of the United States, when Massachusetts had a population of less than a million and a half, and when the Mayor of Springfield earned $1,600 a year ... Northern Heights began its 100 year history. Benjamin F. Farrar, Springfield Builder of 'fine residences and other dwellings' began construction of a brick block of 32 two-story brownstone houses on Central Street in downtown Springfield. And now this stately 19th century neighborhood has been restored to its former status. . . ."[7]

Although they were constructed for wealthy residents, the Northern Heights houses over the years had been subdivided into small apartments with few redeeming features. Apparently few repairs were made, and when the structures were acquired by the developer many of the houses had been abandoned. Among the renovated units there are now 13 efficiencies, 42 one-bedroom units, 46 two-bedroom units, 15 three-bedroom units and 12 four-bedroom units.

This large-scale, mixed-income rehabilitation project has had a clear impact on the surrounding area, an old Italian neighborhood that is now racially and economically diversified. The project has brought stability to the neighborhood and has encouraged investments in other residential properties in the area. At least 20 households that once occupied the deteriorated houses are back at a renovated Northern Heights.

St. James Hotel/New England Conservatory of Music

Location: Washington Street, South End, Boston

Former use: Hotel with 400 rooms, built 1868 (John R. Hall, architect). Acquired 1882 by New England Conservatory of Music for teaching programs and women's residence. In 1902 became Franklin Square House, residence for young business women. Six-story, 355-room addition built 1914. Acquired by the city 1970

New use: Franklin Square House, 193 apartments for the elderly

Developer: State Street Development Company, Boston

Architect: Boston Architectural Team, with Archplan, Inc., Boston

General contractor: Benjamin Polishook, Inc., Boston (now C.W.C. Builders, Inc.)

Construction schedule: Begun June 1975; completed November 1976

Total floor area: 176,494 square feet (gross)
89,391 square feet 1868 building
87,103 square feet 1914 addition

Cost: $3,778,771 construction
$19,579/unit
$21.41/square foot
$4,158,771 total development
$21,548/unit
$23.56/square foot

Financing: Mortgage loan from Massachusetts Housing Finance Agency. Section 8 rental subsidies from U.S. Department of Housing and Urban Development

Franklin Square House, built as a hotel and having already survived several transformations, is commencing its second century as renovated apartments for elderly residents. The significance of this most recent renewal is heightened by an appreciation of the building's varied and illustrious past.

The St. James Hotel opened in April 1868 in a new area of Boston created by landfill. Overlooking a fine public square, the French Second Empire hotel was the best and largest in the city. Its guests enjoyed the finest comforts then available: elegantly furnished and decorated surroundings, reading rooms, club and billiard rooms and separate parlors for ladies and gentlemen.

Despite its elegance, the St. James Hotel suffered a premature demise after only 14 years—a victim of rapid industrial expansion in the area.

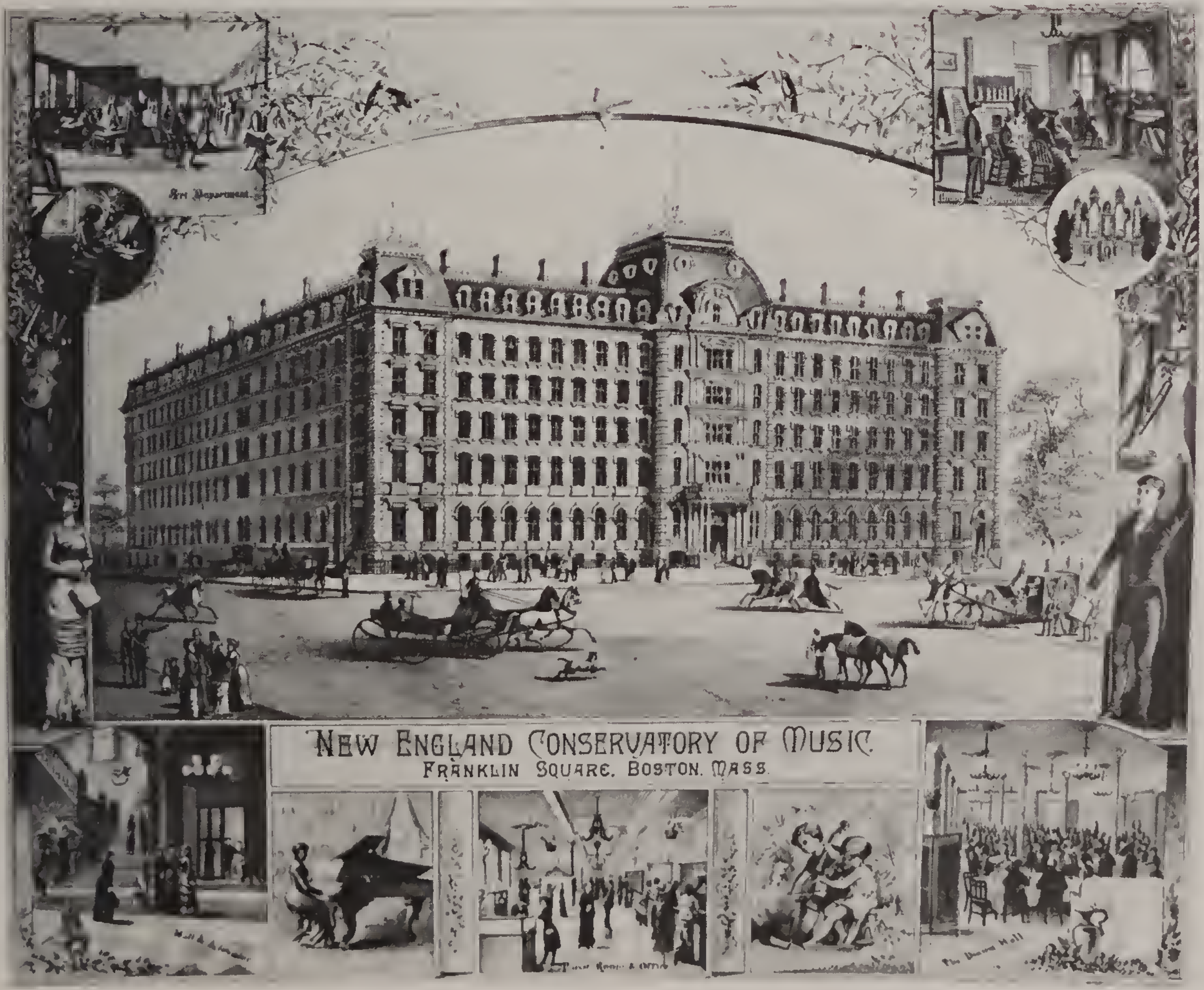
However, because of its public spaces and room configurations, the St. James was well suited to the needs of the New England Conservatory of Music, which established its new headquarters in the building in 1882 and offered economical accommodations for up to 550 students. The conservatory spent $700,000 to renovate the structure, including the construction in 1888 of an auditorium-concert hall that used portions of the first and second floors. About 1900 the expanding conservatory attempted to gain city approval for construction of an addition, which would have required purchase and removal of part of a city-owned cemetery. The city hesitated, and the school found new quarters elsewhere.

In 1902, the building was purchased by a Universalist minister to provide a comfortable reasonably priced home for women with limited incomes. Franklin Square House was organized as a nonprofit corporation with a well invested endowment fund and lasted 56 years. It proved so successful that a new building adjacent to the original structure was constructed, necessitating relocation of a portion of the adjacent burying grounds. The enlarged Franklin Square House included three bowling alleys in the basement, a ballroom and a gymnasium.

In 1970 the building was purchased by the city to provide housing for nurses at nearby Boston City Hospital. However, by the time plans were completed, the city found it could meet much of the need for nurses' housing by retaining and renovating already existing nurses' residences. Thus, for the first time in its 102-year history, the building stood empty. The Boston Public Facilities Department considered numerous proposals for adapting the building. While the city looked for an interested developer, parts of the building were used as an alcoholic detoxification center, a lounge and snack shop for senior citizens, a health clinic for South End residents and the South End Little City Hall.[8] In 1975 the city sold the building to State Street Development Company for $380,000, which was $120,000 less than its 1970 purchase price. However, by doing so the city attracted a developer that saved and restored the famous building, a goal strongly favored by community groups and residents in the South End. The city also retained facade easements on the property to protect the exterior of the building from unsympathetic alterations. The building is now on the city tax rolls for the first time since 1885.

Because of the serious deterioration the building suffered while it was vacant, the renovation was not an easy task. Although the exterior masonry walls were intact, major portions of interior floors supported by load-bearing wood beams had virtually collapsed. Not a single floor in the building was level; there was as much as 14 inches difference in floor level between the front and back walls of the building, a span of 80 feet. Extensive structural reinforcement and rebuilding required the jacking or replacing of more than 20,000 floor joints to make the floors level. All non-load-bearing partitions were removed and both buildings were essentially stripped for installation of new mechanical, electrical, plumbing and fire prevention systems.

The original lobby still functions as a large and attractive living room. Although its appearance has changed considerably over the years, the original decorative columns were retained, as was the black-and-white marble floor in the main hallway. The

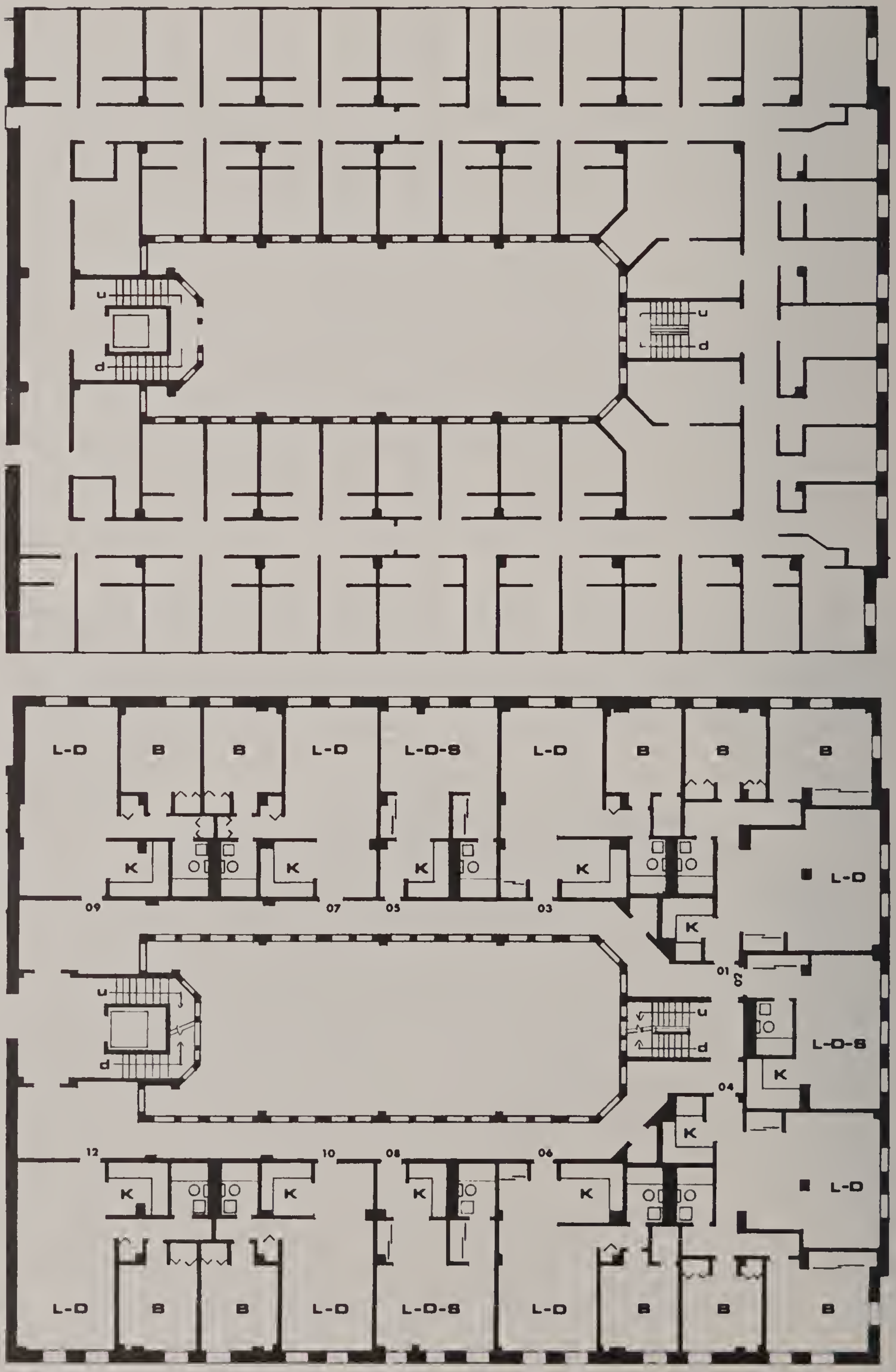

Art Department
NEW ENGLAND CONSERVATORY OF MUSIC
FRANKLIN SQUARE, BOSTON, MASS.

The St. James Hotel, when used as the New England Conservatory of Music. (courtesy Boston Architectural Team, Inc.)

wide and winding staircases of the original building are also basically intact. The concert hall used by the conservatory, converted to a gymnasium for the Franklin Square House, was converted once again to two floors of apartments. The ballroom, its earlier elegance all but vanished, was subdivided into apartments, although its attractive arches and columns were retained in the apartment units.

Changes in the floor plan of the 1914 addition were major. To achieve more space and exterior windows for each unit, corridors were relocated from their center position to run along the interior lightwell.

Considering the seriously deteriorated condition of the building and the substantial physical alteration undertaken, the total development cost of $21,548 per unit is impressive. Perhaps the most important benefit, however, is that the Franklin Square House renovation has had an extremely positive effect on an area of Boston whose future has long been considered precarious. Rowhouses in the area are gradually being renovated, sometimes by developers, but often by individuals. The area is renewing itself from within.



Floor plans of the Franklin Square House addition before and after renovation. (Boston Architectural Team, Inc.)

Colonial Hotel

Location: Pleasant Street and City Hall Avenue, Gardner

Former use: Five-story, 96-room hotel, built 1922

New use: 31 apartment units—29 one-bedroom units and 2 two-bedroom units plus some commercial space

Developer: Weston Associates, Inc., Boston

Architect: New England Architectural Services, Inc., Framingham

General contractor: L. H. Hewett, Jr., Inc., Framingham

Construction schedule: Begun July 1975; completed June 1976

Total floor area: 36,500 square feet (gross)
21,000 square feet apartments
2,300 square feet basement commercial
13,200 square feet miscellaneous (laundry, corridors, stairways, office, etc.)

Cost: $575,000 construction
$17,372/unit (excluding commercial space)
$15.75/square foot
$855,000 total development
$25,832/unit (excluding commercial space)
$23.42/square foot

Financing: Permanent financing from Massachusetts Housing Finance Agency. Approved as 121A project by city

In the days before the Massachusetts Turnpike and before frequent plane travel, the Colonial Hotel in downtown Gardner was regarded as one of the best hotels in Massachusetts. Built in 1922 by H. L. Stevens Company of New York City, its construction was partly financed by the sale of stock in the hotel to Gardner citizens. Gardner's location halfway between Boston and Albany on the principal east-west road across the state made it a logical place to build a fine hotel. The main railroad line between Boston and Albany, via the famous Hoosac Tunnel, also went through Gardner, thus increasing its importance as a major stopover point.

By 1975 Gardner was still an important city, well-known for the manufacture of fine wood furniture, but passenger trains no longer passed through Gardner, and motorists travelling between Boston and Albany were able to cross that distance in half a day (instead of two days) via the Massachusetts Turnpike, which took them well south of Gardner. Significant east-west traffic did skirt Gardner on Route 2, especially when the fall foliage was at its peak, but these travelers were not oriented to a downtown hotel. Instead, motorists began to seek out the nearest look-alike motel along the highway. Thus, the days of the Colonial Hotel seemed numbered unless a major change in use could be found.

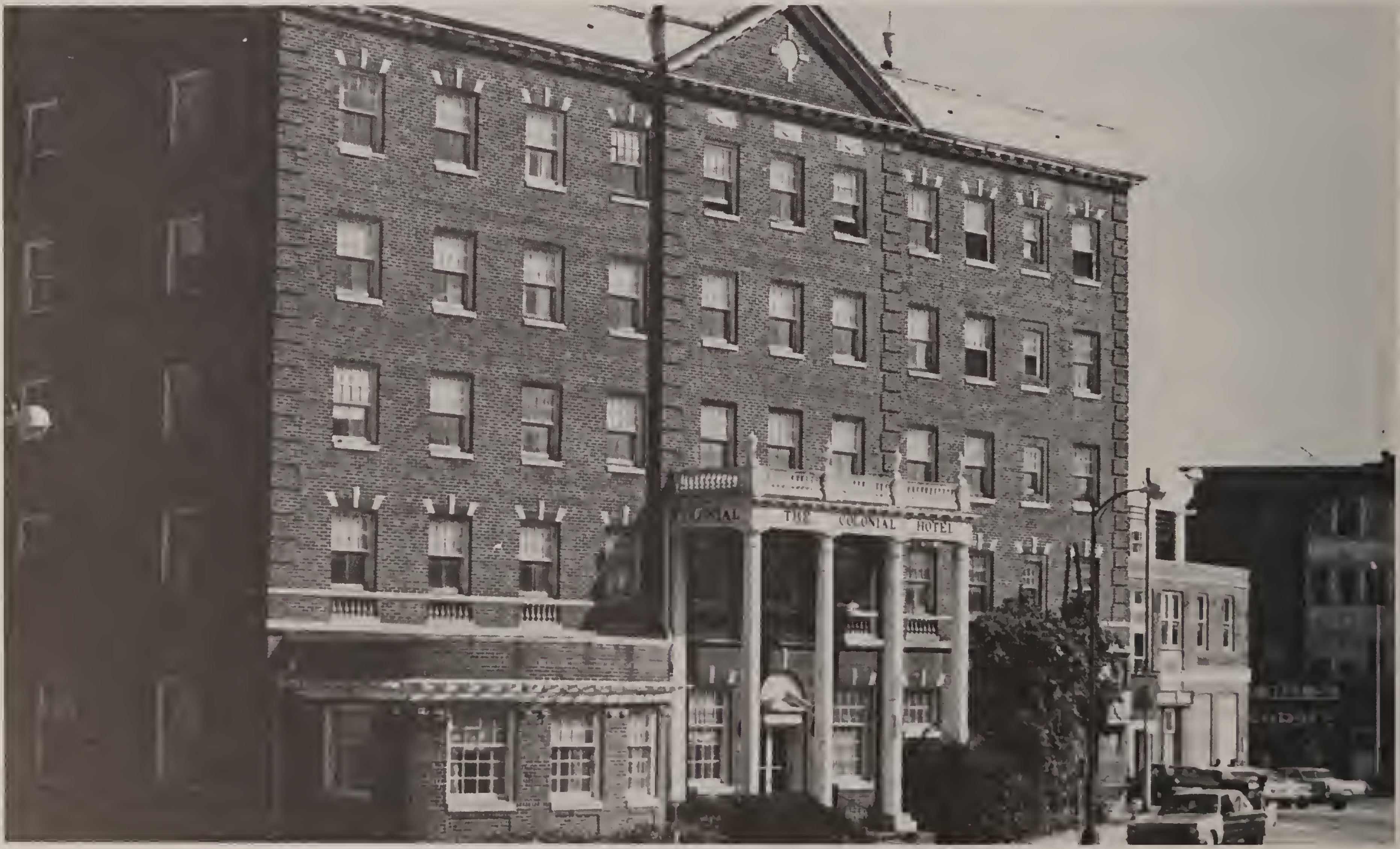
Although the demand for overnight accommodations had declined, there was a need for housing in the center of Gardner. By converting the hotel to housing, the city was able to obtain 31 new housing units in a location advantageous not only to the new residents but also to the revitalization of the central business district. Moreover, by recycling the hotel it

The Colonial Hotel, converted to convenient downtown apartments. (Leigh Woodward, New England Architectural Services)

was possible to avoid any disruption or clearance in the downtown area and to maintain the architectural harmony among the hotel building and the nearby post office, city hall and police station. Indeed, the overriding advantages of the project to the city led it to approve a long-term Chapter 121A tax agreement with the developer. The city also granted a variance on the number of parking spaces that might otherwise have been required, as it would have been impossible for the project to have met the city zoning requirement of one parking space for each apartment.

Under the renovation plan, each of the four upper floors (with 24 hotel rooms each) was converted to seven one-bedroom apartments. The hotel rooms had been relatively shallow, so that three rooms were combined to form a single apartment unit. While the sizes and shapes of these new apartments vary, the average size of a one-bedroom apartment is approximately 630 square feet. The basic floor plan for the upper floors was retained; the double-loaded corridor runs lengthwise through the center of each floor. A new elevator was installed in the original elevator shaft, and stairways were rebuilt in their original locations.

One of the unfortunate aspects of this reuse project was the need to sacrifice for financial reasons the elegant proportions of the original hotel lobby and dining room (and the detail that graced their high ceilings) to accommodate three additional apartment units on the first floor. The old lobby and dining room could have served as poignant reminders of the building's past and lent dignity and grace to its new use. Yet such a loss exemplifies the imperfection that is often part of adaptive use projects.



Boardinghouse to apartments. In Upton, a four-story frame boardinghouse, built in 1900 to house workers from the Knowlton-Kartiganer hat factory across the street, has been converted to 34 apartments (22 one-bedroom units and 12 two-bedroom units). The building contains a total gross floor area of 31,228 square feet, of which 26,228 is leasable, 761 square feet is storage and 4,239 square feet is used for circulation. The large site permitted extensive landscaping and a children's playgound, as well as parking space for 65 cars. Before its conversion the building had been used as an auction hall and sat vacant for many years before a plan for its reuse was finally developed. The developer for the project was John Gallagher, Elgin Associates, Boston. The architect was R. Wendell Phillips and Associates, Boston, with Douglas Haring Associates, Inc., Boston, as consulting architect.

The Upton Inn, as it is now called, was completed in January 1975 at a total development cost of $805,000, of which $82,000 was for acquisition of the building and the more than two acres of property and $603,000 was for renovations. The cost of construction for the Upton Inn was $17,735 per unit, and total development costs ran approximately $23,676 per unit. In addition to completely renovating and modernizing the structure, the architect also installed a sprinkler system, smoke and fire detectors and a standpipe on every floor to insure maximum safety from fire. Construction began in October 1974, and the building was occupied in March 1976.

The renovation of the Upton Inn, financed and subsidized through the Massachusetts Housing Finance Agency, filled a real void in Upton. The project represented the first publicly assisted multifamily housing in Upton built for low and moderate-income households. Other subsidized housing had been built in Upton but it was available only to the elderly.

Hotel to housing for the elderly. In New Bedford, an old 200-room downtown hotel at High, Pleasant, Middle and Foster Streets, which closed in 1969, has been converted to 122 housing units, primarily for the elderly. The total cost of the conversion, completed February 1974, was $1,836,000 or $16,393 per unit. The structure now contains 88 one-bedroom units, 8 two-bedroom units and 16 efficiencies. The project was financed through the Massachusetts Housing Finance Agency. The New Bedford Redevelopment Authority assisted by satisfying MHFA insistence on one parking space for every four housing units; it sold two tracts of adjacent cleared land to the developer for 50 cents a square foot. The developer was Ernest W. George, Milton; the contractor was Cosmo Construction Company, New Bedford; and the architect was George Earl Ross, Braintree.

Hotel to apartments. In Fitchburg the former Johnsonia Hotel at 520 Main Street has been rehabilitated as 52 apartments. The total cost of the renovation, completed in September 1973, was $826,966 or $15,903 per unit. The project was financed through the Massachusetts Housing Finance Agency. David H. Nichols, Brookline, was both the developer and contractor for the project, and the architect was Saul Moffie, Boston.

The Upton Inn, now serving as apartments for low and moderate-income residents. (R. Wendell Phillips and Associates)

[1] Robert Schur, speech delivered at "New Life for Old Buildings" conference, March 4, 1975, Harvard University.

[2] See Appendix A, Preservation Resources. These funds are available through the U.S. Department of Housing and Urban Development under the Housing and Community Development Act of 1974, which requires cities and other local governmental units to provide information to local citizens and offer them the opportunity to participate in the program application process.

[3] Charles Tseckares, speech delivered at "New Life for Old Buildings" conference, February 18, 1975, Harvard University.

[4] "The Statler Closing," *Boston Globe*, December 12, 1976.

[5] "Credit Union Restores 1865 House as Offices," *Preservation News*, August 1975.

[6] Letter from Joyce Furlong, Carabetta Enterprises, to Gene Bunnell, December 14, 1976.

[7] "Northern Heights Revisited" (Meriden, Conn.: Carabetta Enterprises, 1975).

[8] All historical information derived from "Franklin Square House 1976" (Boston: State Street Development Company of Boston, 1976).

Churches and other institutional properties have frequently been victims of changing social and land use patterns and development pressures. Until recently it was almost invariably assumed that churches in particular, because of their religious function, were inherently unadaptable for other uses—thus making demolition inevitable when they were vacated.

Institutional structures are not a minor component of Massachusetts communities. The Cheswick Center reports that in Boston in 1973 approximately 575 parcels of land were owned and occupied by churches, synagogues, chapels, rectories, convents and parsonages.[1] Church-owned properties in 1973 occupied an estimated two square miles (or four percent) of Boston's 47.8-square mile area and, according to the Boston Assessing Department, represented more than $70 million in assessed valuation. Institutional and church-related properties are probably as significant a factor in other communities throughout the state and the nation.

Even more important than the total land area covered by institutions are the prominent sites on which these structures are often located. The destruction of landmarks at these locations can have a disproportionate impact—visually and psychologically—on the quality and appeal of a given community. Exploring and facilitating reuse alternatives for troubled or abandoned institutional structures, so that the buildings themselves can be retained, are thus essential elements in maintaining the health and vitality of cities and towns.

Threat to Urban Churches

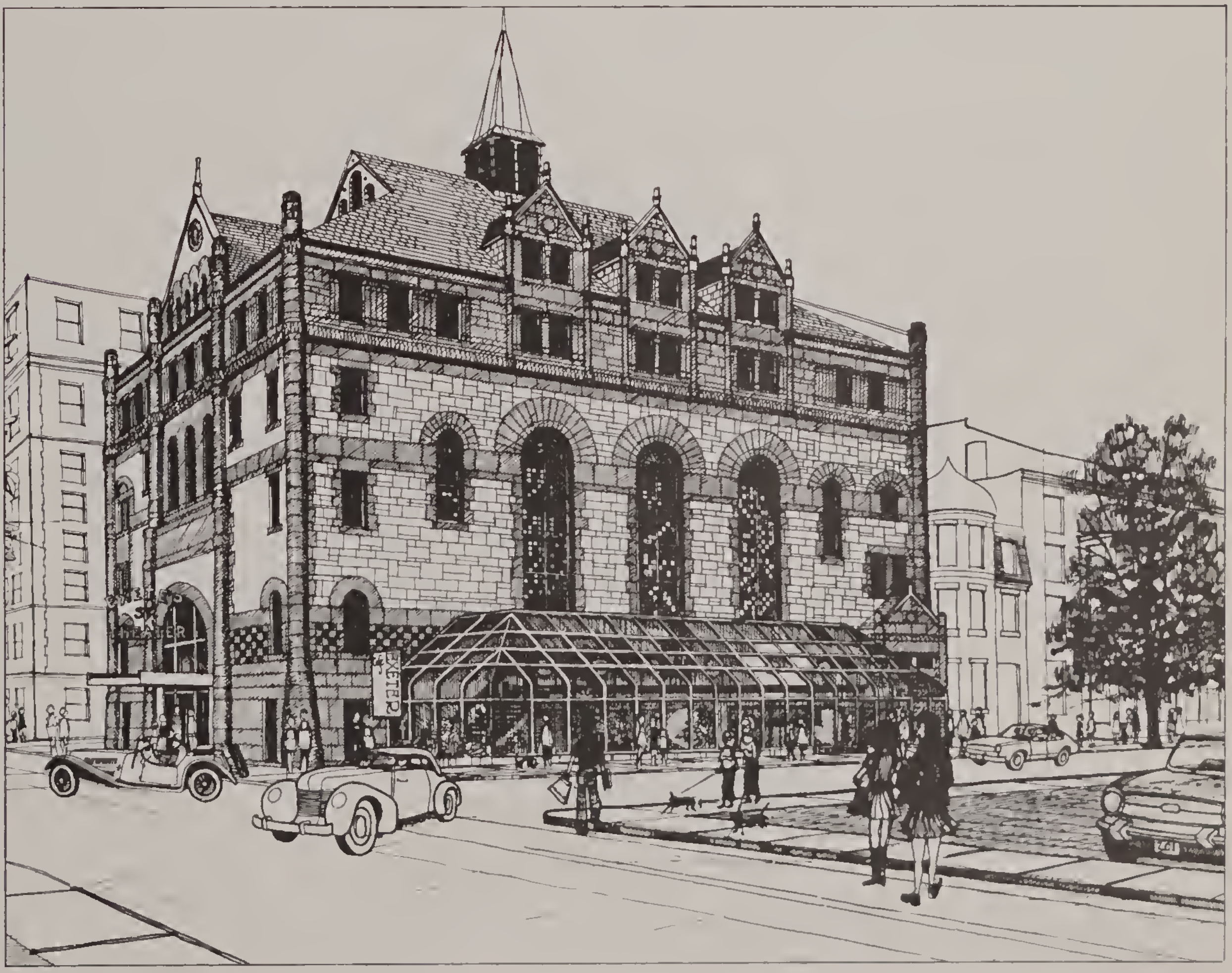
Centrally located churches in urban areas have been especially vulnerable. Their congregations have dwindled as members moved to the suburbs, and they have often been unable to attract and serve the needs of new residents. Faced with in-

Demolition of the tower of Watertown's landmark First Parish Unitarian Church. (Ken Hird) sufficient revenues to maintain operating costs, many congregations have succumbed to what seemed their only choice—sale of the church properties to developers who planned to raze the original buildings. Such instances have been all too common. The Church of the Unity in Springfield (1866), designed by Henry Hobson Richardson and the famous architect's first important commission, was sold by its congregation to a commercial developer, which demolished the church in 1960. Seventeen years later, the land is still vacant. And in Watertown, the 133-year-old meetinghouse of the First Parish Unitarian Church, which had an elegant tower that was the most prominent visual landmark on Watertown Square, was demolished in 1975 to make way for the construction of a drive-in tellers' window for a local bank.

Recycling Church Buildings

The Springfield and Watertown demolitions are but two incidents among many that will be repeated over and over again unless communities finally realize that recycling such community landmarks is possible and desirable. Too often local communities have been indifferent to the closing and demolition of church buildings, failing to recognize the extent to which such distinguished buildings contribute to the quality and livability of the areas in which they are located. Church buildings are important not only to their members; they are also significant to entire communities as established physical landmarks. Many religious structures possess outstanding architectural quality. Their size, detailing and distinctive steeples add grace and beauty that enrich a community's sense of place. By their mere physical presence, such structures help to hold neighborhoods together in times of severe economic pressures and rapid change. Lacking such focal points, a community's ability to control change and to maintain its definition and stability could be seriously weakened. Thus, it is very much in the interest of communities to encourage the retention and, if necessary, the adaptive use of threatened church structures.

There are many possibilities for reuse. The well-known and highly successful Exeter Movie Theater in Boston is thriving in a building that was originally a church. In the town of Abington, a former church now serves as the town hall, again a central meeting place for residents. In Wenham, G.T.E. Sylvania has converted a convent to a corporate training center. The following section contains various reuse examples to suggest some of the avenues that can be explored. The Ellis Community Center and the First Baptist Church examples suggest that new social and cultural activities can be successfully accommodated in former churches to meet community needs. Where such community use is not possible, more radical forms of reuse can sometimes be achieved. The Magna Building and St. Mary's Convent case studies, for example, illustrate conversions to housing that allowed retention of the impressive exteriors of the structures.



The Exeter Movie Theater, Boston, formerly a church building. (Childs, Bertman, Tseckares Associates, Inc.)

First Baptist Church

Location:	Central Square, Cambridge
Former use:	Church, built 1881 (Henry Hartwell and William Richardson, architects)
New use:	Restored church, with multiple community uses and tenants
Developer:	First Baptist Church congregation
Architect:	Ann M. Beha, assistant to the head, MIT Department of Architecture, architectural designer
Construction schedule:	Begun summer 1975; to be completed spring 1978
Total floor area:	15,000 square feet usable space
Cost:	$250,000 restoration and repair
Financing:	Income from tenants, church funds from sale of parsonage and National Park Service matching preservation grant of $36,100

Most of the case studies in this book deal with dramatic transformations of existing structures. But sometimes the most crucial preservation step is to stave off demolition month-by-month and year-by-year and piece together a series of less dramatic interim solutions, each of which helps to bring about a final reuse solution. The case of the First Baptist Church in Cambridge is such an example of gradual and incremental change, involving more the change of an institution than the change of a structure. The physical changes that have occurred are largely those of maintenance and repair—restoring the church building to a point that it has at least a chance for survival. This strategy also buys time for the congregation to plan carefully for the best final disposition and use of its church and gives the surrounding community time to recognize and appreciate the building as a community asset and to participate in shaping its future role in the community.

The best method of presenting this case study is to excerpt a report written by Ann M. Beha, who served as architectural consultant to the First Baptist Church as this reuse strategy evolved:[2]

One of the special aspects of this project is that it applies preservation skills and technology to a community-owned building and for clients who thought preservation was only for the rich, for colonial New England towns, not for working-class neighborhoods. The project also called for the architect to act in new ways, not to create a new design, but to spend as much time with a balance sheet or a community meeting as with a working drawing and specifications.

The First Baptist Church occupies a ¾-acre site at a busy intersection and marks the boundaries between the residential and commercial Cambridgeport neighborhoods. Like many other urban churches, First Baptist is well located, with excellent access to public transportation and off-street parking; large, seating 1,000 in the sanctuary; and threatened with a dwindling congregation and a long list of building problems. The church is a fine example of the Gothic Revival style, and a testament to the tragedy of deferred maintenance. This building has been used as a part of daily life in a community, and as the community has changed the church has stood empty all but Sundays, unheated, darkened by impenetrably dirty windows, its grounds home to litter and drunks, a standard scene for the declined Central Square commercial district.

In 1975 the congregation was unwilling to let go of the church but confused about what to do with it. It had been approached 10 years earlier by developers interested in the site for a combined highrise and church facility, but the venture ultimately fell through. The congregation had con-

The First Baptist Church, a neighborhood landmark. (Roger N. Goldstein)

sidered selling the building and buying a neighborhood house, but it realized that would be the end of the building and the end of the congregation. Finally, in December 1975, the leaks and confusion became too much. A new committee, later called the Restoration and Renewal Committee, was formed to consider the alternatives for the congregation and the building. The committee hired an architecture student and began to deliberate the congregation's fate in Central Square.

A thorough building analysis, repair and maintenance plan was developed for the church. This study brought in several technical consultants, contractors and craftspersons to examine the building and suggest methods and costs for repair. The study was funded jointly by the congregation and two foundations that were interested in the problems and potentials the church posed.

The building did have potential and problems. Some of its potential lay in its appearance and variety of interior spaces. Constructed of red brick, with terra cotta and brownstone trim, the building is organized in two parts: sanctuary and ell. The balconied sanctuary features excellent acoustics, an exposed wood trusswork system, a large altar, interior cast-iron columns and central 16-foot rose window. Original paint and decoration survive, and the organ is in excellent condition. The ell offers a number of large community rooms, opening onto a central two-story vestry, 4,000 square feet in size. Pale colors in the stained glass windows make the ell a sunny and inviting place, and throughout the church there are multiple exitways, several bathrooms and excellent hardwood floors. The ell boasts a remarkable wall system of triple-hung stained glass windows that, following repairs, slide up and down to open the entire first floor as one space or divide into several rooms around the central vestry space.

The building survey developed a five-year plan for building repair and an annual maintenance plan, citing costs, methods to be used and several

A stained-glass sanctuary window being restored. (*The Cambridge Chronicle*)

alternative priority lists for repairs. With this building analysis, congregational problems were examined and various alternatives were researched. This aspect of the project was perhaps the most difficult, leading to a consideration of the larger issue of redundant churches and the barriers that frequently impede their reuse, such as zoning and code restrictions, tax status and even community attitudes against secular activities occurring in church buildings. Loosening the strict associations of function with the space was important, and a series of drawings for radical reuse of the building as a community–civic center was presented to the congregation for discussion. The sanctuary was a restaurant, with concerts and community meetings, the ell a performance space, with classrooms, offices and a small cafe. These ideas both disturbed and excited the congregation. That there might be ways to meet needs in the community, to be a resource for activities and even entertainment, began to be discussed. At the same time, support was growing outside the church for its maintenance and use. A scheme was presented to the congregation for rental of the ell and, ultimately, multiple uses for the sanctuary. Rental would allow the church to retain the sanctuary for its own uses on Sunday and retain control over the building while receiving income for its maintenance and restoration from outside groups. The congregation began to see the building as a resource, and in June 1975 it voted to begin a program for restoration and adaptive use of the church.

The question remained: Who would be the users? The Restoration and Renewal Committee met with the project manager and The Cheswick Center to set guidelines. The users were to be nonprofit groups, they could not smoke or drink in the building and they were to provide their own basic janitorial services. The rental fees were developed on the basis of calculations for overhead and a quick survey of fees at other community facilities in the Boston area. The New England Folk Arts Center and the Institute for Contemporary Dance, both long active on the Boston area dance scene, were immediately interested in the space. They liked the hardwood floors, the flexibility of the wall system, the building location and the rental fees. They also liked the idea of the program and the transitional state at the church; they were looking for a permanent home and the church presented long-term possibilities. Their proposed schedule and rental agreements were approved at a congregational meeting after some debate. The Institute for Contemporary Dance paid $1,200 a month for its use of the building from early morning to early evening, and the Folk Arts Center paid a set fee of $45 per session, or 40 percent of the admission fees, whichever was higher. The weekends were initially left open for congregation activities, but many dance events have been held on the weekends since the program began. In a short time, the church also became home to a newspaper office and a new group of Seventh Day Adventists, who used the basement and the sanctuary.

After 10 months of the program, the contracts with users were renewed for the coming year, and the Restoration and Renewal Committee met with community leaders to develop plans for greater use of the sanctuary for concerts, cultural events and public meetings. The initial phase of reuse netted $20,000 earmarked immediately for restoration and more income is anticipated as programs increase. Equally important, a larger step is being taken toward identification of the building with the community and of the building as a resource, not an eyesore, in the city.

Where to start was the question for the restoration effort. Resources for initial repair were generated from sale of the church's parsonage, in a neighboring town. The steeple was clearly in poor condition, but leaks and plumbing problems would affect the users. The heating plant required updating to meet user needs, and it was doubtful that the sanctuary's stained glass windows could survive another winter intact. The congregation put high priority on repairs for the ell, to make the space marketable for the adaptive use program. The ini-

Institute for Contemporary Dance exercise class in the church vestry. (Roger N. Goldstein)

tial funds bought extensive roofing repairs, new plumbing lines, a new burner and a heat timer, repair of the sanctuary windows, storm sashes for the sanctuary and extensive repair on the exterior woodwork. The building survey had produced a repair plan and costs, so the project got under way quickly. Members decided that they wanted to buy and install a tape carillon in the belfry. The project manager and other consultants opposed this; they wanted the church to fund repairs, not carillons. The congregation liked the idea of music in the square and wanted pedestrians to hear as well as see that the building was alive. They viewed the carillon as part of the renewal, and they prevailed against their opposition. Since the carillon installation, the congregation has received a number of letters thanking them for the music, as well as several contributions from local residents. The professionals were wrong; the congregation needed that improvement just as much as it needed the roofing repairs. In a project like this, emotional needs have to be recognized for their importance along with more pragmatic repair needs.

As a landmark, the church had additional opportunities for outside funding. Through the efforts of the Cambridge Historical Commission the church was nominated to the National Register of Historic Places, making it eligible for National Park Service matching grants-in-aid. This designation resulted in a grant of $36,100 over a two-year period. The historical commission was also interested in exploring the possibility that some of the restoration work could be financed from the city's community development block grant funds. Several other sources of support were also tapped, and these, when added to the church's funds and rental fees from tenants, resulted in an available budget of more than $90,000—assembled in only 12 months.

After the adaptive use program began, a more detailed structural analysis of the deteriorated masonry and steeple was made, and repair of these is the focus of ongoing work. Extensive stained glass repair and exterior wood trim restoration are also under way, and the rose window has been completely reset. The major portion of the restoration program should be completed by spring 1978. It should not be necessary for the congregation to raise additional money from its own ranks after this current phase. The income from users is expected to put the restoration and maintenance programs for the church on an independent basis from now on.

East Boston Masonic Hall

Location: 344 Meridian Street, East Boston

Former use: Masonic hall, built 1890s, later used by light industry. Gutted by fire in 1973

New use: Masonic Hall Apartments, 54 units of rental housing—2 studio apartments, 47 one-bedroom apartments, 5 two-bedroom apartments

Developer: East Boston Community Development Corporation

Architect: Childs, Bertman, Tseckares Associates, Boston

General contractor: Benjamin Polishook, Inc., Boston

Construction schedule: Begun January 1975; completed December 1975

Total floor area: 55,000 square feet (gross)

Cost: $45,000 acquisition
$22–24/square foot estimated
(Exact costs not available because project financed as part of package covering four separate renovations)

Financing: Construction and long-term permanent financing (plus interest subsidy benefits) from Massachusetts Housing Finance Agency. Approved as 121A project by city of Boston

The renovation and reuse of the former Masonic Hall in East Boston is an outstanding example of how the shell of a building, even one gutted by fire and exposed to the elements for more than a year, can be utilized to provide housing that is otherwise virtually new. Even when total "gut rehabilitation" is required, savings in building costs can be realized simply by using the existing foundation and walls. The Masonic Hall rehabilitation project is all the more unusual because the exterior shell that was saved was rather ordinary and architecturally undistinguished. Even in its best days, the East Boston Masonic Hall was far from a beautiful building. Yet over the decades people in East Boston had become accustomed to the building, and there was strong community support for trying to save it. For the people of East Boston, reusing the shell of the Masonic Hall for housing was perceived not as a major new development but rather as a way to keep the community the same.

New housing is often confronted by similar community sentiment opposing intrusions or change but favoring reuse of existing buildings. New construction can occur only by using vacant land, which in many communities is a scarce commodity greatly cherished by residents, or by razing a building familiar to residents. In both cases, new construction appreciably changes the character and appearance of the area in which it occurs. Rehabilitating an existing building, on the other hand, is a way of achieving a change in use without significantly altering the way the community views itself. For reasons that might best be explained by sociologists, adaptive use of an existing building does not seem to be perceived by residents as having as major or as undesirable an impact as new construction—even though its environmental impact, through traffic congestion, noise, utility demands and school enrollment, can be as sig-

East Boston Masonic Hall after 1973 fire. (Ciro Giordano)

nificant. In many communities construction of needed subsidized housing units has been seriously delayed or jeopardized by community objections of various kinds. Yet the experience with the Masonic Hall in East Boston, which parallels that of the Gloucester Central Grammar School conversion (see page 102), points out the fact that significant numbers of housing units can be produced with little local opposition—in fact, with strong community support—by converting vacant existing buildings.

This lesson, which suggests that the public is more willing to accept change if it is achieved through adaptive use of a building they know and can relate to, has definite implications for developers. Even in cases where there is no clear cost advantage to rehabilitation over new construction, a developer may still believe that there is some significant advantage to renovation if it will speed local approval and eliminate any possibility of delay.

In its renovated state the old Masonic Hall still tends to blend with the surrounding buildings, which are of similar vintage. The interior of the building, however, is transformed into spacious and light apartments, with modern kitchens and appliances, generous closet space and large windows overlooking the harbor and the city. The especially high ceilings of the second and third floors became a major asset in the conversion of the building to housing because they allowed the insertion of two extra floors in the building. Thus, the Masonic Hall was enlarged from its original three stories to five stories of apartments without increasing the overall height of the building.

Renovation of the Masonic Hall was a major, and comparatively costly, rehabilitation project. The expense of the project might have made its economic feasibility as a private venture questionable if the developers had not financed it in a package with three other less extensive and less costly renovations. A single financing package was developed through the Massachusetts Housing Finance Agency covering a total of 96 units on four different sites. The high construction cost of the Masonic Hall apartments was thus offset by the substantially lower costs of the other rehabilitations. This technique kept the overall construction cost of the entire rehabilitation package to $14.50 per square foot, even though the Masonic Hall renovation itself probably cost well over $22 a square foot.

The cost of construction, of course, is not the only basis for determining economic feasibility. The key determinant is the comparative profitability of rehabilitation versus new construction, i.e., whether or not rehabilitating an existing old building will produce as much income and profit as constructing a new one. The Masonic Hall offered some significant economic advantages over what might have been built on the site. The old building provided more square footage of rental space than a new one would have because it was built before zoning regulations were instituted and therefore had almost no setback and a high ratio of lot coverage. If a new building had been erected on the site it would have had to conform to current zoning regulations, would have needed a much greater setback and probably also would have had to provide at least some on-site parking. The only way to meet these provisions and still have as much rentable space would have been to build a much taller building, which in turn would have tended to increase construction costs. Even if the developer had been prepared to build a highrise apartment building, zoning provisions might have limited building height. Also, local opposition to highrise construction can be intense. Given these considerations, the interests of the developer and the community coincided in the reuse of the older, existing building.

An initial equity investment for the project was obtained in the form of a limited partnership from private investors, who were attracted to the project as a means of "sheltering" income. Such a project can be especially advantageous to investors because of Internal Revenue provisions allowing accelerated depreciation of housing developments (both rehabilitation and new construction) built for low and moderate-income households. Rapid depreciation of the property provides investors with a moderate rate of return in the form of dividends and a valuable tax "loss" on paper.

One quarter of the apartment units in the Masonic Hall is leased by the Boston Housing Authority under the state's rental assistance program. This program allows tenants of units leased by the housing authority to pay no more than 25 percent of their incomes for rent, the difference between this payment and the actual market rent being made up by rent subsidies administered by the housing authority and funded by the Massachusetts Department of Community Affairs.

St. Mary's Convent

Location:	116 Norfolk Street, near Central Square, Cambridge
Former use:	St. Mary's Convent, built 1907, a 4½-story building located on an enclosed ½-acre site
New use:	Congregate elderly housing, 39 units for occupancy by 42 persons
Developer:	Better Cities, Inc., Boston
Architect:	David Conover, Boston
General contractor:	David Conover, Boston, construction manager
Construction schedule:	Begun January 1975; completed November 1975
Total floor area:	25,000 square feet
Cost:	$385,000 construction $9,872/unit $15.40/square foot $570,000 total development $185,000 acquisition $14,615/unit $22.80/square foot
Financing:	Better Cities, Inc., a consortium of savings and loan associations in Boston area (a limited-profit corporation), obtained construction financing from Shawmut County Bank, Cambridge. Purchased after renovation by Cambridge Housing Authority with long-term financing from Massachusetts Department of Community Affairs

Previous case studies have emphasized that reusing old buildings provides opportunities for creating varied and unique residences that increase the range of housing choices. The conversion of St. Mary's Convent, conveniently located near Central Square in Cambridge, clearly illustrates this point because it has made possible a highly specialized type of housing, suited to the interests and needs of a small, but nonetheless important, proportion of elderly persons.

The housing for the elderly offered in the former convent is called "congregate housing," and its goal is to maximize opportunities for residents to share activities and space. Toward this end, the amount of public and semi-private floor space in the building is maximized, and private apartment spaces are substantially smaller than those in more conventional housing developments for the elderly. The purpose behind congregate housing is to meet the needs of those elderly persons who do not wish to be isolated from others by living in self-contained, individualized housing units.

In conventional housing for the elderly there is little reason for residents to come out of their units because cooking and eating are done privately and shared space is kept to a minimum. All too frequently, the community rooms in such new housing projects are in out-of-the-way locations or, even if they are in a central location, they are used infrequently because there is little motivation to use them. The only shared activity of tenants may be sitting outside on a patio on a sunny day. For some elderly persons, at least, such conventional housing offers so few opportunities for shared activities that it contributes to loneliness and despair.

The architect of this project, David Conover (a strong proponent of the concept of congregate housing), chose St. Mary's Convent after a long search to find the right kind of building for the program he envisioned. After 68 years as a residence for nuns who taught in the St. Mary's Church elementary school and high school, the convent was no longer used. In fact, during 1974 a lone college student lived in the convent as a caretaker by arrangement with the church. Like many urban churches (and like the First Baptist Church nearby), St. Mary's Church served a decreasing number of parishioners. Education costs had forced the closing of its elementary school, which was leased to the Cambridge Public School System. A growing proportion of teachers in the parochial high school was lay people, and the nuns teaching in the school preferred to live in private housing in the neighborhood.

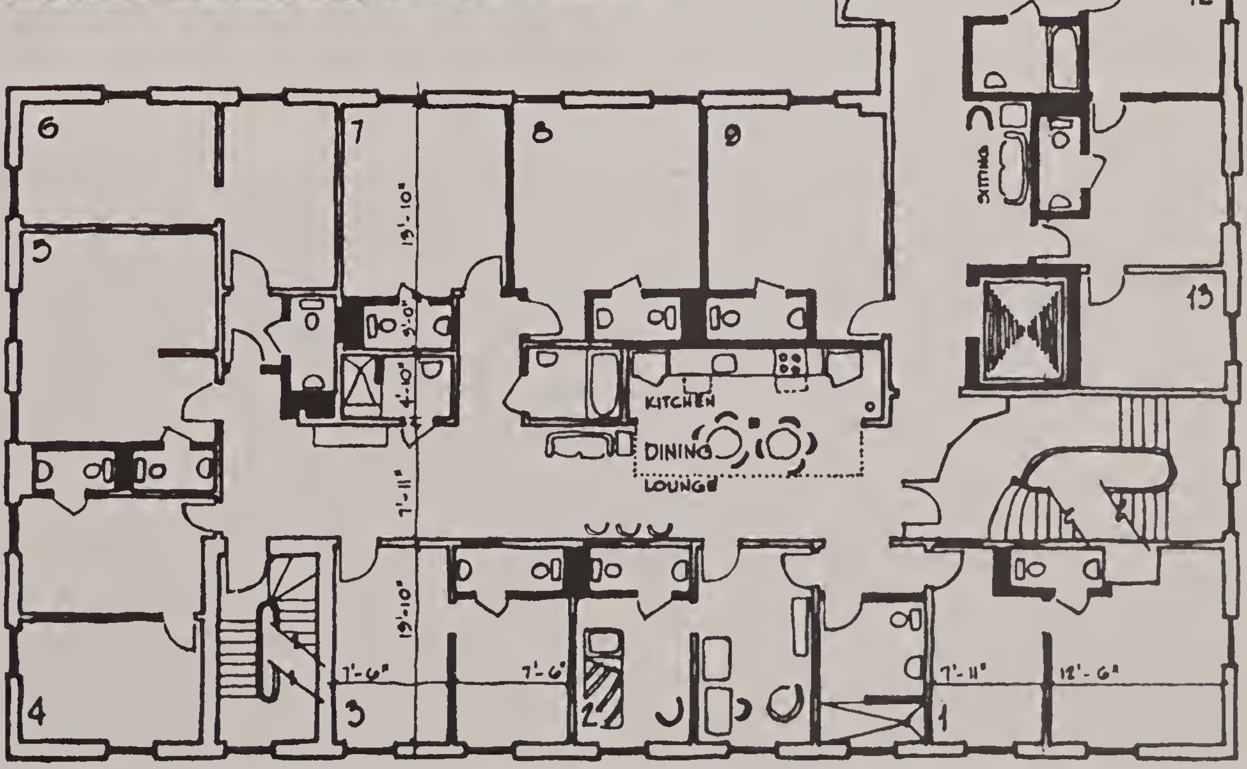
Once construction financing was approved, it took only 10 months to complete renovation of the building. One feature was the conversion of the small chapel, which had occupied space between the third and fourth floors, to two apartments—one on each floor. An elevator also was constructed in the building, as is required in all housing developments for the elderly.

The reuse of the convent for elderly housing seeks a balance between private and shared space through emphasis on semi-private areas, spaces that are shared by a relatively small number of people on a given floor. Each floor has its own spacious open kitchen area, with tables and chairs for socializing, eating, reading, etc. These areas are not used by necessity, but by choice, because hot meals are regularly prepared and served every day in the main dining room shared by all building residents.

Another unusual design aspect of the congregate housing is that there is one shower facility for each three units on a floor. While each apartment has its own toilet and sink, duplication of shower facilities in each unit was not considered necessary.

The first floor of the building houses the main kitchen and dining room, a living room and television room and offices for a full-time professional coordinator of health and social programs, a nutritionist and a resident manager. It in effect functions as a community center for the elderly because it is available to neighborhood residents as well as to tenants of the building. In fact, two-thirds of the people eating in the building dining facility live in the neighborhood rather than in the former convent.

St. Mary's Convent converted to housing for the elderly. (Charles M. Sullivan, Cambridge Historical Commission)



Floor plan showing congregate, or shared, housing design. (David Conover)

Theodore Parker Memorial Hall

Location: East Berkeley Street, South End, Boston

Former use: Unitarian church, built 1872. Jewish Community Center, c. 1900. Later used as cooking school, film studio and rock band nightclub. Suffered a major fire in 1973 when known as Magna Building

New use: The Berkeley Center, with 33 market rental apartments, a variety food store on first floor, a laundry in basement and two additional commercial spaces

Developer: Urban Dynamics Associates, Inc., Boston

Architect: Boston Architectural Team

General contractor: Urban Dynamics Associates, Inc., Boston

Construction schedule: Begun October 1974; first occupancy July 1975

Total floor area: 44,505 square feet (gross)
- 32,000 square feet residential
- 12,505 square feet commercial
  - 30,000 square feet net leasable residential
  - 10,505 square feet net leasable commercial

Cost: $670,715 construction
- $15.07/square foot

$807,630 total development
- $92,415 acquisition
- $44,500 fees, permits, etc.
- $18.15/square foot

Financing: Private conventional financing

The unique spaces in this much-recycled building offered an opportunity to provide distinctive apartment units and commercial space. The main sanctuary hall provided sufficient height to erect three full floors of apartments. The former attic space above the sanctuary hall, which was previously completely unused, could also be utilized by inserting dormers in the mansard roof of the building. This additional floor of apartments made the project economically feasible. Eight single-level apartments occupy the original floor of the sanctuary. The upper space of the sanctuary, organized on two levels, comprises 10 two-level apartments (duplexes), with bedrooms on the upper level and living areas below.

Some particularly unusual apartments were obtained simply by accepting the building the way it was. One apartment, for example, has a large floor-to-ceiling circular window, a by-product of the building's institutional use. The rooms of another apartment are arranged vertically in the building's turret—one on top of the other, linked by a spiral staircase.

The Victorian exterior of the building has been retained, and the brick has been repointed, cleaned and repaired. All windows have been replaced with new insulated glass for thermal protection.

The Berkeley Center retains all the character, scale and symbolism of its former identity, while at the same time providing attractive commercial space and 33 new apartments in an area of intense housing demand.

St. Ann's Academy, Marlborough, recycled as apartments for the elderly. (Phokion Karas)

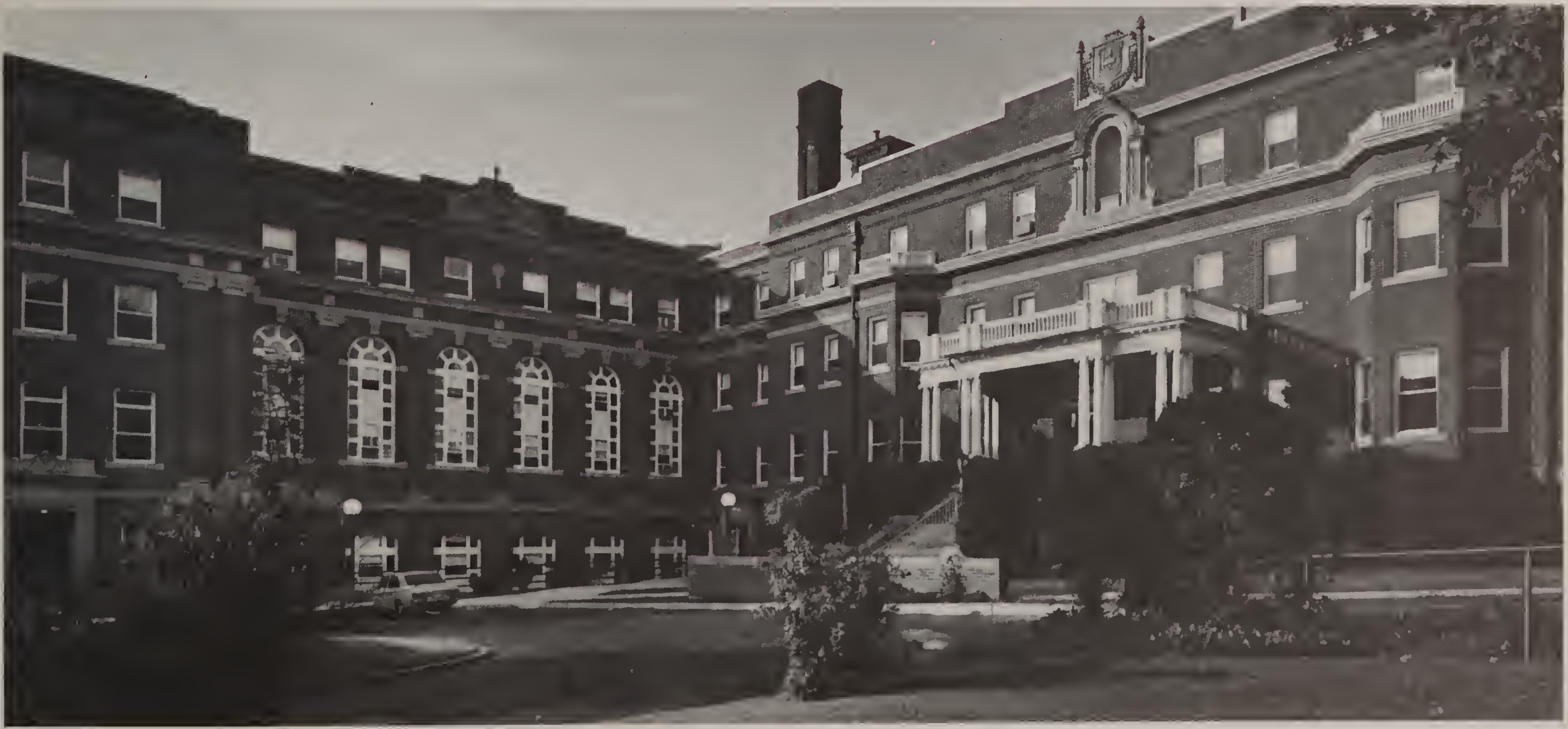
Parochial school to elderly apartments. A large complex, St. Ann's Academy in Marlborough, has been converted to 109 apartments for the elderly (97 one-bedroom units and 12 two-bedroom units). The parochial school, which was forced to close in 1972 because of declining enrollment, included a variety of structures: a convent (the original structure, built 1888), dormitories, classrooms, chapel, auditorium, recreation halls and associated villas. Renovation and conversion of the school began in October 1975, and the first residents moved in July 1976. The former academy is now known as Academy Knoll Apartments.

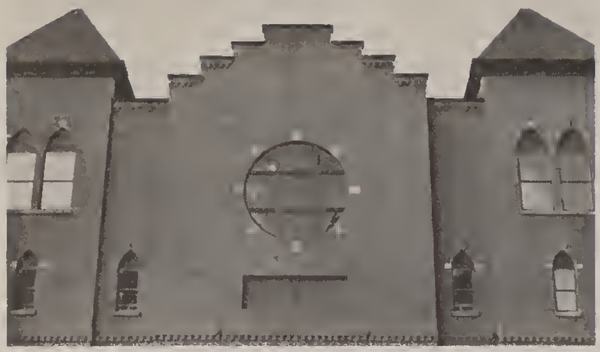
The rich ornamentation that characterized the interiors of the various buildings was retained and incorporated in the new housing plan. Apartments in the former chapel and auditorium wing are enriched by such features as stained glass windows and gold leaf vaulted ceilings. Wainscoted walls, bay windows, built-in wood-panelled cabinets and 11-foot high ceilings characterize apartments in the old classroom and dormitory sections of the complex. Pews from the chapel were refinished and moved into hallways to invite socializing among residents.

The total floor area in Academy Knoll is 110,000 square feet, of which 75,000 square feet is apartment space. One-bedroom apartments range in size from 600 to 875 square feet; two-bedroom units are as spacious as 925 square feet. A large amount of space has been devoted to community recreation, and the former school cafeteria has been renovated as a dining area. New heating, plumbing, air conditioning and fire prevention and detection systems were installed throughout the buildings. The existing elevator was refurbished and an additional elevator installed.

The total construction cost of converting St. Ann's Academy to apartments was $2,028,000 ($18.44 a square foot, $18,606 per apartment). Total development cost, including acquisition, was $2,545,000 ($23.14 per square foot, $23,349 per apartment). Mortgage financing for the project was obtained from the Massachusetts Housing Finance Agency, with rental subsidies through the HUD Section 8 program.

Architect for the St. Ann's Academy conversion was Anderson Notter Associates, Inc., Boston. The developer was Academy Knoll Associates, and the contractor was Taylor, Woodrow, Blitman Construction Corporation, Boston.





Facade detail of the Ellis Memorial Community Center, Boston. (Steven Trefonides)

Church to community center. The building known as the Ellis Memorial Community Center at 66 East Berkeley Street, South End, Boston, has had a checkered career, having previously undergone a series of radical transformations and changes in use. The building is, indeed, a living example of the fact that multiple recycling of buildings is the essence of a thriving and vital urban neighborhood.

Although records are somewhat incomplete, it is generally agreed that the structure, built in 1869, functioned as a United (Scot) Presbyterian Church until 1905, when it was sold and renovated as an automobile repair shop. At that time, two floors were added to the building, and the structure was reinforced and extended to permit operation of a variety store. In 1918 the building was purchased by the Franklin Institute and was used as classroom space for World War I veterans. In 1924 it was acquired by the Ellis Memorial Foundation, which used it for numerous activities and as its administrative offices until 1970, when the foundation offices and preschool program moved to renovated buildings at 42-44 Chandler Street nearby. The foundation then initiated a long-term fund-raising program to finance major renovation of the old building as a highly functional, multifaceted community center. Renovation of the building was phased over a relatively long period of time to keep pace with fundraising efforts.

With renovation and rehabilitation of the building completed, the 10,700-square foot structure functions as a licensed day-care center, teen drop-in center and senior citizens center, as well as a community gathering place for social, athletic and educational functions. The top floor contains a gymnasium–basketball court that doubles as an auditorium. Lockers and showers are provided on the lower level. A full kitchen is included in the renovated building for preparation of meals for large functions and also for cooking classes. The building includes a fully equipped arts and crafts room and a woodworking shop.

The architect for the renovation was Boston Architectural Team, and the contractor was Urban Dynamics Associates, Inc., Boston. The estimated construction cost of $288,000 ($26.91 per square foot) was financed by private donations and gifts to the foundation. The major renovation effort, which began in fall 1975, was completed in spring 1977.

Immigrants home to apartments. In Boston, the first building renovated for housing by the East Boston Community Development Corporation was the old Immigrants Home, a brick structure constructed in 1912 by the U.S. Treasury Department as a temporary shelter for immigrants. The official address of the building, now the Landfall Apartments, is 72 Marginal Street (the street number would hardly appear to be necessary, as the building stands starkly alone on a cleared block). The conversion of the building produced 16 new housing units plus a community room with kitchen and laundry facilities; an additional story containing a combined penthouse apartment and office space was constructed. The building was completely renovated, requiring installation of an elevator in a new shaft constructed on the exterior. The cost was $316,755, or approximately $19,797 per unit, and was financed by the Massachusetts Housing Finance Agency. The likelihood of this small project obtaining MHFA financing was considerably enhanced by the strong neighborhood support of the renovation.

Museum to department store. The Museum of Natural History on Boylston Streeet in Boston's Back Bay has been handsomely, and prosperously, converted to a Bonwit Teller department store. According to manager Benjamin Winter, the store is the most profitable per square foot of any of Bonwit Teller's 13 stores.[3] This measure of economic success represents an irrefutable counterargument to those business executives who contend that old buildings are incompatible with the needs of modern retailing.

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[1] The Cheswick Center and Boston Municipal Research Bureau. *Alternate Uses of Certain Church-Owned Properties in the City of Boston* (Boston: Authors, 1973). Available from The Cheswick Center, 11 Newbury Street, Boston, Mass. 02116. The center is a charitable educational trust devoted to studying and facilitating useful institutional change and has been a source of assistance to individual churches nationwide that face problems of continued use of their property. [2] Ann M. Beha. "Renewal of Place: A Project Report on Restoration and Adaptive Use at the First Baptist Church, Cambridge, Mass." 1976. Available from MIT, Department of Architecture, Cambridge, Mass. 02139. Beha began her work with the First Baptist Church in December 1975 while studying architecture at MIT, and the project became the subject of her master's thesis. Beha has continued as project manager for the church renovation. [3] Anthony Yudis. "Lots and Blocks," *Boston Globe*, November 21, 1976.

Haverhill High School, now the Haverhill City Hall. (Samuel Robbins)

Throughout most parts of the United States, communities are being faced with declining school enrollments and thus find that they have more classrooms and more schools than are needed to accommodate existing educational programs. The underlying cause of the decrease in school enrollment is that the birth rate in the United States has been falling steadily since 1957. While one option might be to reduce class sizes and establish new programs to address previously unmet needs and interests, most communities have been led by fiscal concerns to try to save money by closing, and often demolishing, unwanted school buildings.

The number of vacant schools that are being boarded up or demolished is particularly large in older cities that have experienced significant out-migration, accentuating the drop in school-age population. For example, school enrollment in Framingham, Mass., dropped by 554 pupils in two years.[1] From its peak enrollment of 15,394 in 1972–73, it is anticipated that Framingham's school enrollment will drop to only 7,231 by 1984. The problem of surplus schools is not confined to older cities and towns, however. Suburban communities, which were hard pressed in the 1950s and 60s to construct new schools fast enough to keep pace with increased town population, also now find that they have built more school facilities than they need.

Reuse of Old School Buildings

Faced with the decision of which schools to close, educators and school consultants have tended to close the oldest buildings first, seemingly without regard for the soundness of their physical condition. This practice of discarding old school buildings appears to be based on the assumption that they cannot be adapted feasibly to modern teaching techniques such as use of flexible classrooms and media centers. This assumption is not always correct, as it is often possible to completely reorganize and reuse

space in old schools to achieve new educational purposes. These old schools often are the most revered by parents and students, an attachment that increases local interest and participation in the school system and enhances community identity.

Local officials, therefore, should not completely discount the possibility of continuing to use old school buildings *as schools*, especially those that are sound and can be organized to meet new educational demands. Even if present financial resources do not permit full-time school use of existing buildings, part-time and interim uses for these buildings can be explored (such as rental by community groups and social service agencies), uses that would keep open the possibility of reusing the buildings as schools at some time in the future.

Indeed, local officials should not forget that population and school enrollments are continually subject to change. For example, a community may be the recipient of major new industry or residential development. And, despite budget cutbacks that currently hamper many local governments, increases in federal funding could conceivably provide states and municipalities with funds to establish needed social and educational programs.[2] Constructing new schools or other buildings to house these programs would prove much more costly than renovating existing structures, especially with construction costs escalating 10–15 percent each year.

Abandoned Schools

Nonetheless, school buildings are being abandoned throughout Massachusetts at a staggering rate. It is difficult to estimate exactly how many public and parochial school buildings have or will become vacant in Massachusetts. Hendrik Holmes, a graduate student at the Rhode Island School of Design, has undertaken a systematic assessment of the abandonment of school buildings in Massachusetts by examining Massachusetts Department of Education directories that list all public and parochial schools in every Massachusetts community, giving names, grade levels and pupil enrollments. Holmes compared directories for the academic years 1972–76 and found that 150 schools had been closed in less than four years! This figure does not include schools that were closed before 1972 and cannot predict future closings, which are likely to increase in the near future.

In large cities the replacement and abandonment of old school buildings has been especially common. In Boston, which built approximately 30 new schools during the last seven years, the problem of what to do with vacant school buildings has become so important that the city Public Facilities Department has hired a special planning consultant to oversee and coordinate their sale, transfer and reuse along with other surplus municipal properties such as fire and police stations. In addition, to facilitate the possible reuse of existing school buildings, the Public Facilities Department hired a real estate appraisal and consulting company to inspect and analyze each school structure that might possibly be designated surplus. Through November 1975, 20 school buildings had been conveyed by the city of Boston for some new use. Because the Boston program attempts to anticipate reuse possibilities and to gather the information necessary to attract potential developers to consider reusing an old school building, it may serve as a model approach for other communities. What follows is a typical profile of an old school building prepared for the Boston Public Facilities Department.

Typical Profile of Surplus School Building

A. *Identification*[3]

B. *Building description*

Type of construction: Solid masonry

Number of floors: Two, plus basement partially below grade

Gross building area: Approximately 10,600 square feet (excluding basement)

Overall dimensions: Maximum width—72 feet; maximum length—85 feet

Windows: Wood, double-hung

Roof: Hip style with slate covering

Architectural significance: Yes

Interior layout:

  Basement: Various storage areas, girls' and boys' lavatories, boiler room and custodial room

  First floor: Main entrance vestibule, hallway, classrooms and offices

  Second floor: Double-loaded corridor, classrooms and teachers' room

Interior finish:

  Floors: Hardwood flooring throughout except for concrete basement and tile floors in some classrooms

  Walls: Plaster finish with 3–4-foot high wood wainscoting

  Ceilings: Plaster finish throughout. Ceiling height approximately 11.5 feet

  Plumbing: Girls' and boys' toilet facilities in basement. Fixtures in girls' lavatory modernized to some degree. Boys' facilities totally obsolete

Heating: Radiators supplied by gas-fired steam boiler with automatic controls. Boiler converted from coal to gas 1½ years ago

Lighting: Most fixtures are chain-hung incandescent lights; some are stem-mounted fluorescent lights

Overall condition: Appears to be in good structural condition; well maintained

C. *Description of land*

Size: 19,977 square feet

Shape: Nearly rectangular

Access: Street and rear alley

Topography: Approximately 6 feet below sidewalk grade and fairly level

Yard improvements:

Fencing: Wrought iron and chain link fencing surrounding the property

Paving: Asphalt over the entire yard

Landscaping: None

Parking: Accommodation for approximately 20 cars in side yard

Lot coverage: Approximately 25 percent

D. *Other pertinent information*

Location: Neighborhood predominantly mixed institutional and residential. Public transportation readily available one block north; shopping and a park nearby

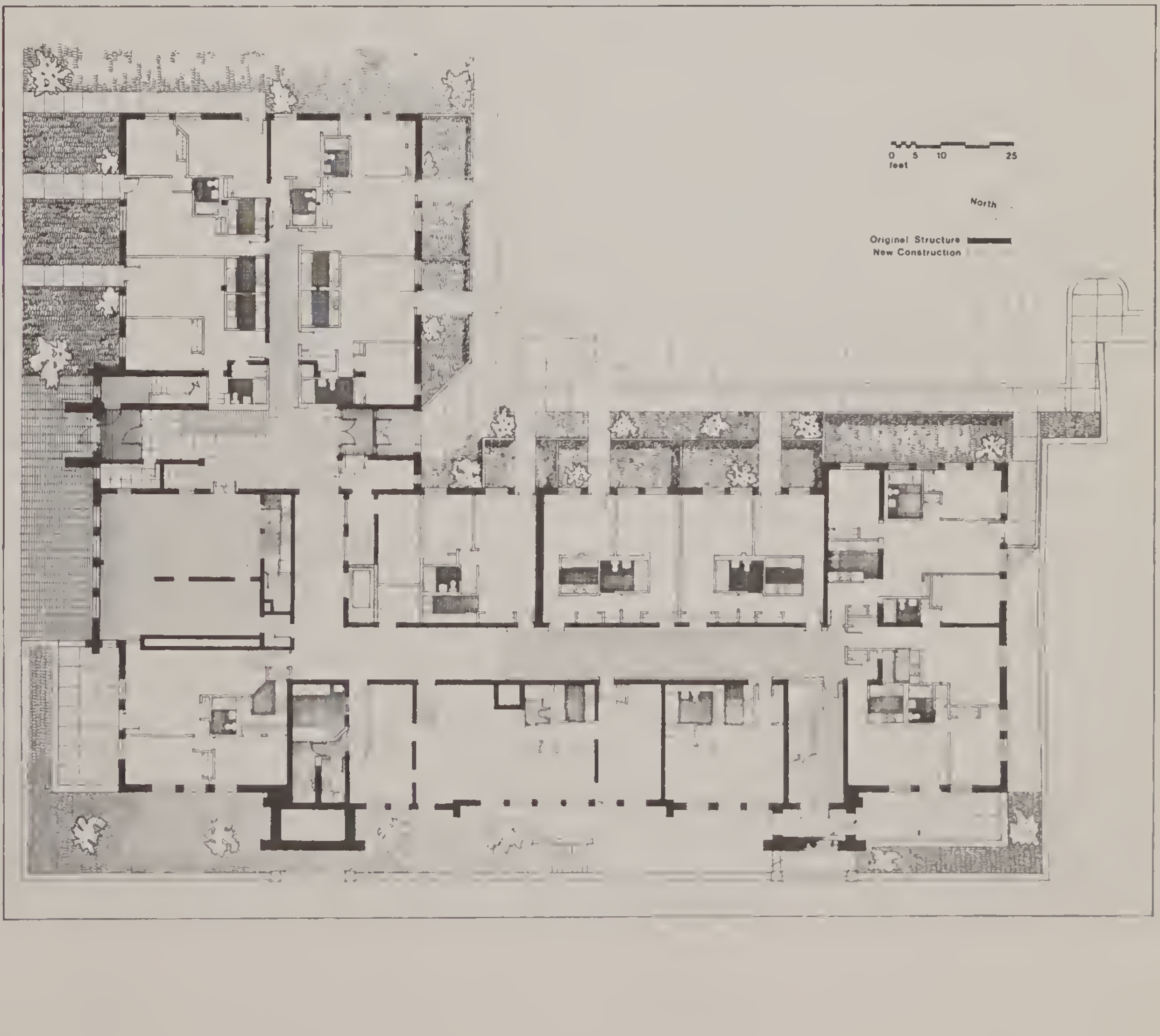
Zoning: H-2 apartment district. Permitted uses include all forms of residential use and various transient housing uses, including a boardinghouse and dormitory. Major development restrictions include a floor area ratio of 2.0 and a minimum front yard of 20 feet

Property history: Constructed in 1884 as an elementary school; no major additions. The property has been well maintained and the heating system has been modernized recently

Conversion to Housing

A major reuse possibility for unneeded school buildings is as housing. Indeed, structurally sound school buildings represent a valuable resource to help solve serious housing shortages. Assuming that each vacant school is capable of accommodating an average of 30 housing units, and assuming the availability of 500 present or future vacant school buildings, Massachusetts could realize 15,000 new housing units statewide by utilizing its stock of surplus school buildings.

To convert a school to housing is such a major change that it is unlikely that such a converted building would ever revert to its original use. On the other hand, a conversion to office use, as exemplified in the Haverhill High School case study, need not necessarily alter the basic classroom structure of a school building. Thus, it is at least conceivable that if school enrollment should ever increase again in places like Haverhill, the city could, if it wished, choose to convert the municipal building back to use as a school. It is important to know that such options exist.



First-floor plan for conversion of the Central Grammar School, Gloucester, to apartments. (Gloucester Development Team)

Haverhill High School

Location:	Downtown, Haverhill
Former use:	High school, built 1909. Used until 1963. Rented by another high school and a community college until 1969
New use:	Haverhill City Hall, including all city offices, police station and lockup facilities
Developer:	City of Haverhill
Architect:	Homer P. Young, Associates, Haverhill
General contractor:	Charles Construction Company, North Andover
Construction schedule:	Begun December 1974; completed May 1976
Total floor area:	110,000 square feet (gross)
Cost:	$1,767,000 renovation $16/square foot
Financing:	Municipal appropriations, including a bond authorization and Urban Renewal Authority funds

The experience of the city of Haverhill presents a good lesson in why communities should not precipitately demolish unneeded school buildings. The old Haverhill High School became vacant about 1963 when a new high school was constructed on the outskirts of the city. At that time no further need for the school building was foreseen. Before long, however, something unexpected happened: The high school serving the nearby town of Amesbury burned to the ground. As a result, Amesbury rented the old Haverhill High for three to four years while it undertook to construct a new high school for itself. Haverhill's old high school building was then rented by the Northern Essex Community College for approximately two years while it also constructed new facilities.

After these interim educational uses, the old high school building again lay vacant. Meanwhile, however, the city developed urban renewal plans that called for demolition of the distinctive Victorian-style Haverhill City Hall (1889) to make way for a highway through the downtown area. The dilemma of where to house the municipal offices found a solution in conversion of the former high school building for use as the new city hall. Not only could the conversion be accomplished more economically than new construction, but the old building also contained such a large amount of space (110,000 square feet) that the scattered city offices and departments, including the police, education and health departments, could be brought together in one building.

Adapting the former school for municipal offices required a minimum of interior alteration and demolition. In most cases individual classrooms were simply converted to separate municipal offices. Where a single classroom was inadequate, two classrooms were joined by a wide opening through the old classroom wall. Where required, classroom walls were removed or relocated to create an altogether new spatial arrangement. (Removal of classroom walls presented few structural problems because load-bearing support columns were located along the outer walls and interior corridors of the building.)

Classroom blackboards were either retained as blackboards or covered with Homasote for use as bulletin boards. Two corner classrooms on the first floor, transformed into the

Haverhill High School under construction in 1909. (Haverhill Public Library)

mayor's office, were singled out for more prestigious treatment and provided with wood paneling on all four walls, plush carpeting and indirect lighting.

Space in the former school was fully utilized. The school gymnasium was converted to two floors of offices through the addition of another floor, and the school library became the city council chamber. When council sessions attract a large crowd, the meeting is able to shift across the hall to the spacious auditorium. A large public auditorium is ideal for a municipal building, and in this case was obtained essentially for free through the reuse of the former school. Had the city chosen to construct a new city hall, provision of a large auditorium for public assemblies probably would have proved prohibitively expensive.

Remarkably, even with construction of police headquarters and lockup facilities in the building and complete replacement of the heating, ventilation, air-conditioning, electrical and other mechanical systems, the cost of renovating the school for municipal offices was only about $16 per square foot. By way of comparison, the median construction cost for new municipal office buildings in 1976 was approximately $39.15 per square foot, and for new police stations approximately $41.50 per square foot (*Building Construction Cost Data, 1976*).

Conversion of the high school to the new Haverhill City Hall was phased over an 18-month period. City offices actually were moved into the building before the renovation began and were shifted around in the building as work progressed. The flexibility allowed by occupying the building before renovation was begun (let alone completed) was another advantage of reusing an existing building. Constructing a new city hall probably would have taken two years.

Clearly, renovation of the former high school saved money and time and also provided extra amenities. Haverhill continues to have as its municipal center a building of architectural and historical distinction, a building in every sense a City Hall.

Central Grammar School

Location: Dale Avenue, Gloucester

Former use: High school, built 1889. Addition completed 1922, doubling size. Became Central Grammar School when a new high school built 1940. Closed 1971

New use: Central Grammar School Apartments, with 80 rental units—73 one-bedroom units and 7 two-bedroom units

Developer: Gloucester Development Team, Inc., Gloucester

Architect: Anderson Notter Associates, Inc., Boston

General contractor: Gloucester Construction Company, Inc., Newton Highlands

Construction schedule: Begun January 1975; first occupancy October 1975

Total floor area: 72,500 square feet (gross)
  57,750 square feet net leasable

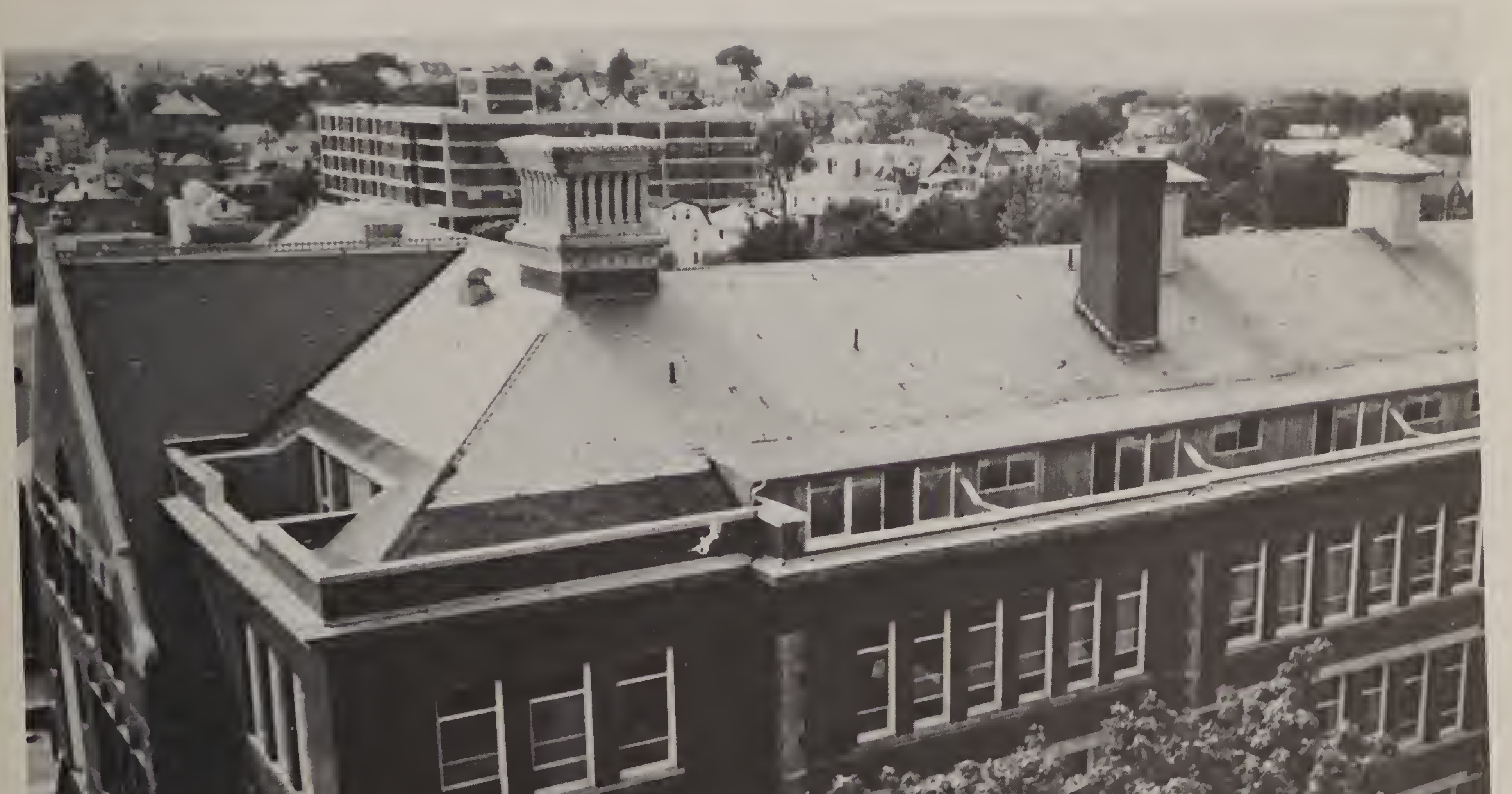
Cost: $1,482,350 construction
  $18,500/unit
  $20.45/square foot
$1,802,000 total development
  $22,525/unit
  $24.86/square foot

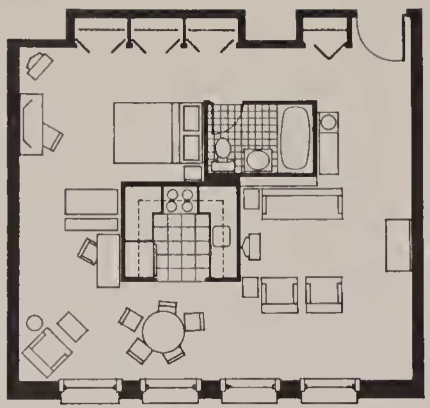
Financing: Construction and mortgage financing from Massachusetts Housing Finance Agency

The case of the Gloucester Central Grammar School illustrates the excellent way in which schools lend themselves to conversion to residential use. Many schools, especially neighborhood schools, are located in or near residential areas and are easily accessible on foot. Schools also are usually located on large, attractive sites, with play areas or parks adjacent. And many old schools, especially old high school buildings, are centrally located on the main street or near the community center. The former Gloucester Central Grammar School and high school is located directly across from the central post office and the city hall, adjacent to the central library, within 100 yards of the central fire station, one block from the Main Street shopping area and in easy walking distance of the railroad station connecting Gloucester to Boston. Only a few blocks away is the site of another former elementary school. This school, however, was demolished to make way for a new highrise building for the elderly. Construction of the new building began at the same time as the renovation of the Central Grammar School, and the contrast between the two projects is instructive. The old grammar school blends in with its surroundings, as it has for eight decades; the new elderly housing is a box-like building that towers over its surroundings.

Apartments in the Central Grammar School are much larger than those in the highrise, averaging approximately 950 square feet, whereas the average apartment size in the highrise is two-thirds that size. By and large, it was cheaper to allow the school's former classrooms and classroom walls to define the sizes of new apartment units. In other words, whatever economies might have been gained by accommodating additional units in the structure would have been more than offset by the extra

The Central Grammar School after adaptation as apartments, with the new highrise housing for the elderly in the background. (Jerry Klinow)





Apartment layout for typical former classroom. (Gloucester Development Team and Anderson Notter Associates, Inc.)

construction costs required. Ceiling heights in the Central Grammar School range from 9½ to 13 feet, compared to a standard ceiling height of 8 feet in the new building. The apartment layouts in the old school provide variety because the previously unused attic, unneeded stairwells and entrances and other odd-shaped spaces were all used to accommodate new apartments. In the new structure two blocks away, all dwelling units seem to be made from the same mold.

Yet perhaps the most startling differences between the Central Grammar School Apartments and the high-rise are in costs and economic feasibility. The cost of constructing apartments in the Central Grammar School averaged $18,500 a unit ($20.45 per square foot) compared to $25,666 ($31.86 per square foot) in the new building (based on a projected total cost of $2,310,000).

The school building was purchased for $96,000. Other development costs associated with the project were: architect's fees, approximately $75,000; surveys and permits, $4,000; bond premium, $10,000; construction loan interest, $98,500 (this was the official amount budgeted, but was actually reduced because the project was completed in eight months instead of a year as originally expected); real estate taxes paid during construction, $15,000; insurance, $10,000; legal fees, $15,000; MHFA financing fee, $18,500; title and recording expenses, $5,500; organization and accounting fees, $5,000; apartment rent-up and marketing, $15,000; funded replacement reserve, $55,000.

The proportion of total floor space in a building that is "rentable," and thus income-producing, is another indication of a project's economic feasibility, and again Central Grammar scores high in comparison to the new building. Both buildings contain 72,500 square feet of floor space, yet only 61 percent of the floor space in the new building is rentable, while 79 percent of the old school is rentable. Finally, contributing to the economic success of the Grammar School project is the fact that construction, once begun, took only eight months, and the apartments were all rented and occupied within a month of completion. Construction of the new building took more than a year and a half (a long period over which to accumulate high interest charges on a substantial loan), with its first occupants not moving in until September 1976, several months after completion.

Certain design aspects of the Grammar School Apartments are worth mentioning. Apartments are generously provided with large windows, typical of most school buildings, that make the units seem even more spacious than they actually are. The oak window and door trim and oak wainscoting were retained wherever possible. In nine apartments existing maple or fir floors were refinished; all other areas were carpeted. Seven apartments were designed for handicapped tenants.

Before rehabilitation of the school began, many people in the community believed that the building was an eyesore and should be torn down. It had stood vacant for more than three years after closing in 1971, and was boarded up and vandalized. Yet today it is difficult to find anyone who is not proud and pleased that the old building has been given a new life. Eighty new housing units have been introduced with little or no change in neighborhood appearance and with little perceivable environmental impact. In fact, neighbors abutting the property signed a petition in favor of saving the school building and converting it to housing.

Action, Inc., the local community action organization, originally proposed the conversion of the school to housing for the elderly, obtained an option to buy the building in 1972 and established Gloucester Development Team, Inc., a nonprofit development corporation. The owner of the building is Gloucester Development Team and Associates, a limited partnership, of which the local nonprofit corporation and the general contractor are the general partners. Actual construction was delayed for more than a year because of problems in obtaining financing. During this time the building was watched over and kept secure by an extremely conscientious city employee, who made certain that windows were boarded up, doors locked, pipes drained, etc. When the time came to finally execute the sale of the school building, the city council approved the transaction on the condition that the council have review powers at various stages of the development process. The council retained the city's right to repurchase the property in 50 years for one dollar, thus obtaining an added incentive and reward for assisting the endeavor. A necessary special permit was obtained from the city council for the construction of multifamily housing in the Civic Center District, but no zoning change was required to accomplish the conversion.

Assumption School

Location: 15 Seaver Street, East Boston

Former use: Parochial school, built 1890 (Herman Drake, architect), operated by Archdiocese of Boston

New use: Assumption House, 12 mixed-income apartments—2 four-bedroom units, 4 three-bedroom units, 4 two-bedroom units and 2 studio apartments

Developer: East Boston Community Development Corporation

Architect: Childs, Bertman, Tseckares Associates, Boston

General contractor: Benjamin Polishook, Inc., Boston

Construction schedule: Begun January 1975; first occupancy September 1975

Total floor area: 22,000 square feet (gross)

Cost: $204,000 construction
$17,000/unit
$14.50/square foot

Financing: Construction and permanent financing (plus interest subsidy benefits) from Massachusetts Housing Finance Agency

The ease of converting the Assumption School to housing suggests that some characteristics that make a site and building suitable for school use are the same as those that make it excellent for housing: "The large classroom spaces accommodated modern residential floor plans, and the installation of new mechanical systems, without extensive demolition of walls. Very large window openings at levels that would seem awkward in apartments presented both a problem and an opportunity for creative design. The solution was to construct sub-floors supporting bedrooms and living rooms at different levels. Portions of the window openings were covered by metal-clad wood panels that were attached to the exterior of the structure, an appropriate solution because metal-cladding had already been affixed to the building. The only other exterior changes are dormers that were added to the gable roof making it possible to create additional living units in what was previously an unused attic."[3]

By minimizing structural alterations to the building, construction costs were kept comparatively low. The combination in a single financing package of this and two other inexpensive rehabilitation projects elsewhere in East Boston enabled the East Boston Community Development Corporation to renovate simultaneously the old Masonic Hall (see page 90), which had a comparatively higher renovation cost per square foot. The corporation purchased the school for $40,000 after the Archdiocese of Boston had closed it in 1973 because of financial pressures.

The need for new three and four-bedroom apartments in the East Boston area resulted in a remarkable demand for the large apartments at the Assumption School. In a period of only one week, 400 applications were received and the units were rented immediately. The site and location of the Assumption School are perfectly suited to family housing. The building faces an attractive neighborhood park, and there is a small play area on the site itself behind the building.

Hapgood School

Location: 241 Cheney Street, Athol

Former use: Small frame school, built 1888. Closed 1959; vacant for 14 years

New use: Five apartments—1 three-bedroom unit, 2 two-bedroom units and 2 one-bedroom units

Developer: Rural Housing Improvement Corporation, Winchendon

Architect: Boston Architectural Team

General contractor: Housing Contractors, Inc., Winchendon

Construction schedule: Begun May 1974; first occupancy November 1974

Total floor area: 4,570 square feet (net leasable)
1,150 square feet/three-bedroom unit
930 square feet/two-bedroom unit
780 square feet/one-bedroom unit

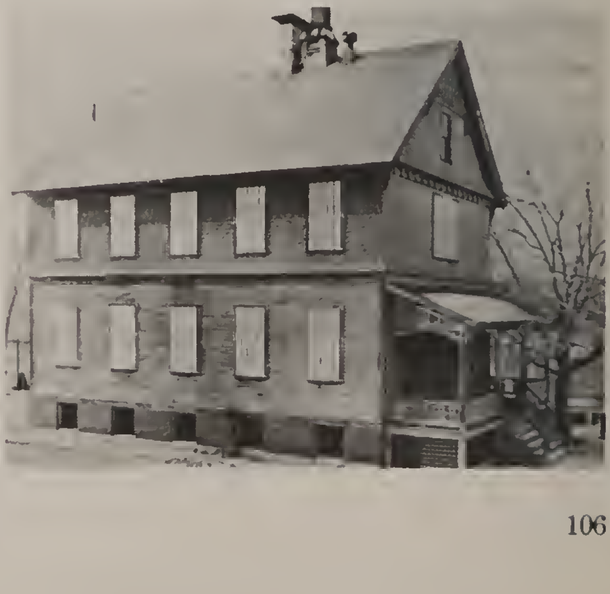
Cost: $87,000 total development
$17,400/apartment unit

Financing: Farmers Home Administration with Massachusetts Department of Community Affairs rental subsidy for all units

School buildings need not be large, or constructed of brick or masonry, to be suitable for conversion to housing. A case in point is the former Hapgood School in Athol. After it was boarded up in 1959 the building became increasingly run-down, and neighborhood residents petitioned the town to tear it down. Despite years of neglect, however, the Hapgood School remained basically sound, due undoubtedly to its excellent initial construction. So, instead of being demolished it was imaginatively converted to five handsome living units by the Rural Housing Improvement Corporation, a limited-dividend corporation that has initiated several small housing projects in central and western Massachusetts.

The conversion not only improved a neighborhood eyesore, it also provided spacious, reasonably priced housing. An added amenity are the hardwood floors throughout the building. According to Harold O. Wilson, executive director of Rural Housing Improvement Corporation, "the floors initially looked horrible, but when they were sanded they looked absolutely marvelous."

Financing for the project was obtained through the Farmers Home Administration of the U.S. Department of Agriculture, a potential funding source for housing construction and rehabilitation in communities under 10,000 population or in those of 10–20,000 population that are "rural in character" and outside Standard Metropolitan Statistical Areas.



The Hapgood School after it was boarded up in 1959. (Rural Housing Improvement Corporation)

More School Renovations

School to apartments. In Boston, the Bowdoin School, built in 1896, is being converted to 35 units of housing—20 one-bedroom units and 15 two-bedroom units. The building had not been used as a school for many years and was one of the schools held by the Boston Public Facilities Department for disposition and sale to private parties. Conversion of the school to housing began in November 1976 and completion is expected in fall 1977.

The Bowdoin School provides an excellent example of how a school building lends itself to apartments. A wide 12-foot double-loaded corridor runs lengthwise through the center of the building, with classrooms on both sides. Outside walls and corridor walls carry all the weight of the building, so that walls between classrooms can be removed and rebuilt in a flexible manner to create desired apartment sizes and configurations. The expense of interior alteration is minimal because there are no complicated mechanical systems between classroom walls to be removed. Ceiling heights are a generous 14 feet and can be lowered as needed to accommodate new mechanical systems. There is natural light at both ends of the corridors, where the stairways are located. Moreover, the pitched roof of the building, which formerly contained an unused attic, has allowed the addition of a fourth floor of apartments by cutting dormers through the roof. Each of these fourth-story apartments will also have a 12-foot by 5-foot balcony. Conversion of the building will result in virtually no change to the exterior appearance of the building, especially because the fourth-story dormers will not be visible from street level. The conversion will include installation of elevators and central air conditioning. The building contains a gross floor area of 42,460 square feet, of which 26,140 square feet will be rentable. The developer for this project is the Continental Wingate Company, Inc., in conjunction with the Beacon Hill Civic Association. Boston Architectural Team is the architect, and the contractor is C.W.C. Builders, Inc.

Short-term construction financing of $1,054,000 is being provided by the Massachusetts Housing Finance Agency (approximately $30,114 per apartment). Permanent financing will come from the Government National Mortgage Association (GNMA), with the 40-year mortgage insured by FHA. Seventy-five percent of the units in the converted school will be eligible for Section 8 rental subsidies through the U.S. Department of Housing and Urban Development.

High school to housing. The Massachusetts Department of Community Affairs has approved funds for conversion of the former Seeglitz High School in Peabody to 76 units of housing. This reuse of a school building will result in a variety of apartment types and sizes, including six two-story duplex units in the former attic. Renovation of the school to

The Bowdoin School, Boston, following rehabilitation as apartments. (Boston Architectural Team, Inc.)

housing was to begin in summer 1977.

Once completed, the ground level of the building will accommodate community facilities, crafts rooms and offices for the Council on Aging. The kitchen facilities of the school will be modernized and reused. An old addition, formerly used for the school industrial arts programs, will become a maintenance facility for the Peabody Housing Authority. Architects for the conversion are Bedar and Alpers, Inc., Boston.

Junior high to health and human resources center. In April 1977 construction began in Amherst to renovate the old Intermediate School (1929) in the center of town for use as a health and human resources center, including health facilities, a senior citizens center, veterans services and space for local voluntary organizations and the town board of health. The total development cost of the new center, containing 18,830 square feet, will be approximately $1,100,000.

The town of Amherst was imaginative in utilizing varied funding sources for the renovation, including major local commitments. Although an application for U.S. Department of Commerce Economic Development Administration funding was turned down, the town did receive $185,000 in U.S. Department of Housing and Urban Development community development block grant funds over a two-year period. The Amherst Redevelopment Authority contributed $15,000 in public improvements for the center. The town itself initially appropriated $72,000 for plannning and architectural services, pledged a veterans housing fund of $90,000 to the project and at a special town meeting in March 1977 authorized issuance of bonds totalling $410,000 over a 20-year period. Another key local funding source was a private trust fund of about $250,000. A judge ruled that the fund, bequeathed by a local resident for construction of a hospital, could be used to help finance the center, legally fulfilling the intent of the bequest.

The school reuse project is part of Boltwood Walk, a larger mixed-use project of the Amherst Redevelopment Authority that will include commercial uses (retail stores and office space) plus 80 units of new housing for the elderly. These residential and commercial uses are expected to assure the long-term viability of the project by helping to offset the cost of the health and human resources center. In the words of James Cope, Amherst town planner, "the center may not be self-sustaining, but the project as a whole *will* be sustainable." Architects for the renovation are Juster/Pope Associates, Shelburne Falls, and the contractor is H. P. Cummings Construction Company, Ware. Lyndon Associates and Arrowstreet, Inc., Cambridge, are responsible for planning the public spaces related to the Boltwood Walk project.

High school to insurance company headquarters. Although a nondescript contemporary building, the Xavier High School in Concord, on Route 2 across from Emerson Hospital, constructed in 1962, was nonetheless built to last. However, in 1971, after serving as a parochial high school for only nine years, the school was forced to close for financial reasons. Happily, the premature and unexpected closing of this structurally sound, not-so-old building was the prelude to its dramatic transformation in 1975 into the New England headquarters of the Sentry Insurance Company.

Interior classroom and hallway walls in the three-story school were removed to create 139,000 square feet of continuous and uninterrupted office space—an open floor plan similar to that found in new buildings designed expressly for office use. The former school cafeteria in the basement was completely renovated for use as a dining area. The school gymnasium is now used by the firm's employees, a tangible fringe benefit of working for the Sentry Insurance Company that the company would have been unable to provide had it constructed a new office building. The 1,000-seat auditorium, with stage, is used by the company and is also available as a community service to local theater groups. The large site of the school provided more than enough space for employee parking. Architects for the renovation were Day and Ertman, Inc., Lexington, and the contractor was Barr and Barr, Inc., Boston.

[1] Manli Ho. "New Classrooms Go Unused as Enrollment Drops," *Boston Globe*, November 30, 1975. [2] If the Surplus School Conservation Act of 1976 (HR 13575), introduced by Rep. John H. Heinz (R-Pa.), passes, it would provide federal grants for local governments to renovate closed school buildings for "productive" purposes. [3] This profile is of the Joshua Bates School, 731 Harrison Avenue, Boston, ward 8, precinct 2. Built in 1884, the school is now used by a group of artists. [4] Massachusetts Housing Finance Agency Newsletter, May 21, 1975.

Strategies for Community Renewal

"The quality and character of a town reside in the sum of its multiple and often fragmented inter-relationships—in the spaces between buildings no less than in the buildings themselves; in its uses of land and juxtaposition of functions; the social mix of its communities; in the workday objects and structures with which we furnish it; with the wider landscape setting in which it finds itself. ... What is essential is that, somehow, we achieve much more purposeful control over the processes of change, so that what is best from the past is retained, and what is less than good is replaced by something better—thus constantly enriching the environment rather than eroding and diminishing it."
—Michael Middleton, Civic Trust of Britain, 1973 National Trust annual meeting

"The city's core of handsomely recycled old buildings complemented by excellent new buildings, united in an inviting network of green pedestrian passages, puts its emphasis on the human dimension and the highest standards of urban design. Its economic base is being reestablished on restored streets and in landmark buildings.... Salem's results promise to be a stunning rebuke to every community that has ever thought the only way to revitalization lay through imitation of those shopping centers or by mutilation of what was often a unique identity for shoddy-slick, newly-jerrybuilt anonymity."[1]
—Ada Louise Huxtable

Transforming renewal theory into reality, sometimes a seemingly impossible distance to travel, is being done with increasing success in Massachusetts cities such as Salem and in other towns and neighborhoods throughout the country. What these community revitalization efforts have in common is a realization that the whole—whether a residential street, a business district or an entire city—is more than the sum of its parts, more than any one building, social or economic goal or interest group.

The following case studies focus on different methods used to revitalize four communities in Massachusetts, using a mixture of public and private investment, local and national involvement and innovative as well as proven renewal techniques. Like them, other communities can become sensitive to their own equilibriums—their plans for the future tempered by their past—and determine appropriate and workable strategies for community renewal.

Rehabilitated Derby Square in downtown Salem. (Lawrence Lowry)

Salem: Correcting Past Mistakes

Perhaps the most significant and instructive application of renovation and reuse in Massachusetts is under way in the small seaport city of Salem. Salem's scheme for revitalization is significant not only because of its magnitude—$35 million in public and private expenditures in the downtown business area alone—but also because of its complexity and the mixture of approaches employed. Salem's renewal is distinguished by the restoration of many architecturally and historically significant buildings from the 17th, 18th, 19th and even 20th centuries. But the renovation has not stopped there. It has extended throughout the downtown area and to the entire city. Encompassed by this all-inclusive approach to renovation have been countless buildings, otherwise undistinguished, that in the context of areawide renewal have acquired new importance and value. The impact of this overall rehabilitation effort applied to a variety of buildings of all types, ages and descriptions has been stunning. So much so, in fact, that in 1972 the U.S. Department of Housing and Urban Development granted the 40-acre Heritage Plaza East project a biennial Project Design Honor Award. By 1975, about half of the 33 structures designated for their architectural and historical merit had been restored.[2]

In addition to this interweaving of historic preservation and general rehabilitation, Salem has managed to achieve a sensitive and sophisticated balance of renovation and new construction that has resulted in a handsome mixture of old and new buildings giving a dynamic and invigorating quality to downtown. In Massachusetts communities, too often new buildings have been introduced in ways that have destroyed the character and economic stability of surrounding areas of older buildings. In sharp contrast, new buildings in Salem have been designed to complement and enhance existing structures. Although their design is unquestionably contemporary, these new buildings respect their urban context and function constructively in ways that do not compete with existing buildings. This successful equilibrium of extensive reinvestment in old buildings and selective encouragement of new construction is unique in Massachusetts. For example, although Newburyport has been renewing itself through renovation and reuse of old buildings, its effort has yet to involve new construction to any significant extent. What has happened in Salem is therefore of special interest, particularly in terms of formulating a balanced community development strategy.

It is hard to fully appreciate Salem's recent revival, and the degree to which the reuse of old buildings has contributed to it, without understanding some of the background. In fact, what one sees now when visiting Salem is exactly the opposite of what was intended. In the early 1960s, Route 128 was constructed as a major circumferential highway ringing the Boston metropolitan area, dramatically increasing the accessibility of many outlying communities but essentially bypassing Salem. In a relatively short period of time major industries had relocated along Route 128, and a large new suburban shopping plaza was constructed in Peabody (next door to Salem) at one of the highway interchanges. These trends were viewed with alarm by public officials and merchants in Salem; and in 1962, after prompting from the local chamber of commerce, the Salem Redevelopment Authority was formed.

By 1965–66 the Salem Redevelopment Authority had drawn up an urban renewal plan designed to allow the city to keep pace with adjacent communities enjoying superior automobile access. The plan called for massive demolition, major grade-level parking areas and a completely new highway pattern featuring a 60-foot-wide highway encircling the central business district. The plan looked appealing when presented as a model —it featured many new buildings, all modern and futuristic. Indeed, the deceptive appeal of this "dream city" caused citizens to overlook how devastating it would have been. All of the now-restored buildings on Front Street would have been demolished. The building that now houses the Lyceum Restaurant would have been demolished. The proposed new highway would have supplanted the Beef and Oyster, a popular restaurant in a renovated building that is now the centerpiece of the downtown area. The plan also would have taken the offices of the *Salem News*, located in the old Salem Hotel building. This action would probably have forced the newspaper, the largest employer downtown, to relocate outside the city. The Bowker Block on Essex Street, built 1828–30, now handsomely renovated as the East India Square and occupied by the L. H. Rogers clothing store, would have been cleared away. In retrospect, knowing how successfully these buildings have been renovated, the proposed urban renewal plan seems to have been especially destructive.

In 1968, demolition began. The first area to be cleared was the northern third of the urban renewal area, a neighborhood of run-down 18th-century houses that were basically sound and could have been renovated. Ironically, this land was still vacant in 1977. One house, however, did escape demolition. That home, built in 1811, belonged to Bessie Munroe, who refused to leave when the wrecking crews arrived. Because she was old and frail, authorities decided to wait until she died. But Bessie Munroe did not die until 1971 and by then the original urban renewal plan had run out of steam. Indeed, after three years of demolition not a single developer had been found to build on the cleared land, the project was bankrupt and the plan was discredited.

In 1971 the entire governing board of the Salem Redevelopment Authority resigned, and a new board was organized. Its first act was to halt any further demolition and to permanently save the Bessie Munroe house. Today the house is completely restored as a private residence and has become a local landmark—an important reminder of past mistakes and a symbol of the city's new com-

The Beef and Oyster restaurant in a renovated building in the area proposed for 1960s urban renewal clearance. (Lawrence Lowry)

Salem Five Cents Savings Bank and new addition. (Peter Zaharis, *Salem News*)

mitment to restoration. The reconstituted Salem Redevelopment Authority established a new set of principles to guide all future renewal activities in the city. According to its head, William J. Tinti: "The first principle was that there would be no more demolition unless there was a firm prospect for something better on the site. Secondly, we decided to abandon the rigid master plan approach to urban renewal, and instead to develop the plan as we went along. In effect, what we had was a blank piece of paper on which we tried to put pieces together one at a time. And thirdly, we decided to drop the idea of having the project occur only within some artificially determined boundaries. Our idea was to improve the entire City of Salem."[3]

Looking back on the city's experience, Tinti is convinced that the path adopted in 1971 was the most desirable and feasible one available: "I think it is ironic that the first urban renewal plan was developed and promoted by people who were always regarded as being practical and realistic. Yet what they proposed to do in Salem was far from practical or realistic. Indeed, it was impossible."[4]

It was not an easy task to put the pieces together, even exceedingly small ones. By 1971 the outlook in Salem was negative and pessimistic. After the drastic clearance of so much of downtown and the inability to attract interested developers, few people in Salem seemed to believe that anything worthwhile could happen in the city, and this negative attitude itself became a serious obstacle to the renewal effort. Restoring local confidence came slowly and began to emerge only after rehabilitation of scattered buildings and the addition of highly visible public improvements had begun. The redevelopment authority, because it owned a large proportion of the buildings downtown, initiated piecemeal rejuvenation by selling buildings at low cost to people committed to renovating them.

Public improvements were planned to complement these private renovations. In July 1972, a tasteful new outdoor marketplace was constructed around the Old Town Hall, an area now known as Old Derby Square. The market is suitable for selling produce and crafts and accommodates outdoor gatherings, art exhibits and concerts. Federal urban renewal funds administered through the redevelopment authority were used to finance improvements to the downtown pedestrian system, including a pedestrian mall,[5] attractive outdoor lighting, benches and other street furniture, fountains and sculpture, tree planting and landscaping. In addition, the authority purchased facade easements on about a dozen significant downtown buildings that were eligible for inclusion in the National Register of Historic Places. Each building received up to $90,000 for exterior renovation from renewal funds, approximately $600,000 in all. These easements gave the authority the right to preserve the appearance of the building facades. According to Tinti, "Purchasing facade easements was an effective way for the Authority to bring about the renovation of buildings it didn't own. It was the best $600,000 we ever spent."[6] Exterior renovations by private owners were subject to guidelines carefully developed and monitored by staff architects for the Salem Redevelopment Authority.

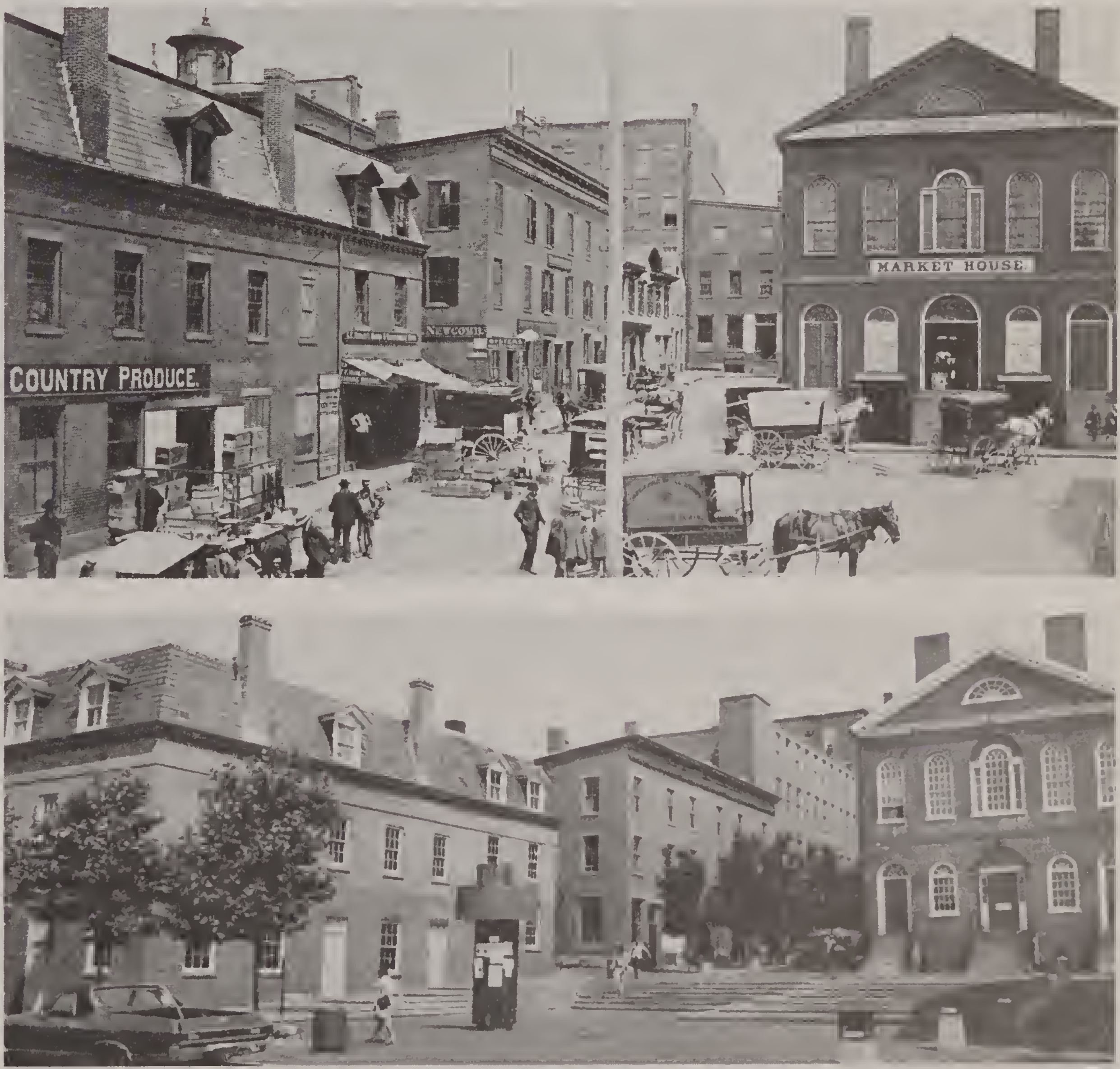
The promising beginnings of Salem's downtown revitalization prompted a $2.5 million Community Development Urgent Needs Grant from the U.S. Department of Housing and Urban Development in 1976, at a time when most HUD renewal projects were being terminated. Overall, more than $35 million in public and private funds has been or will be spent in downtown Salem—an impressive amount in a city of approximately 39,000.

In the beginning, the local business community was skeptical, and local banks were reluctant to lend money for renovation in the downtown area. Yet interest in the plan increased as work proceeded on visible public improvements and exterior renovation. A key element in gaining full support from the local business community was the city's commitment to finance the construction of a 1,000-car multilevel parking structure directly behind commercial properties on the Essex Street pedestrian mall. This parking structure is a highly effective and compact way to accommodate needed parking in a central location. The garage is constructed on stilts so that retail establishments can eventually be accommodated on the ground level.

The Salem Redevelopment Authority's experience with a Montreal developer underlines the perils of depending on large, out-of-town investors to revitalize communities. After six years of negotiations, this firm has yet to begin construction of the retail sales complex (under the garage and on the pedestrian mall) that was once thought to be the key to revitalizing the city. Small local developers restoring existing buildings are responsible for most of the visible progress that redevelopment officials once expected from large out-of-state firms, although the expectation that a large developer would eventually be involved may have contributed to a favorable investment climate.

Although renovation has been primarily responsible for Salem's rebirth, new construction has been intelligently and tastefully incorporated. Two local banks in Salem, the Salem Savings Bank and the Salem Five Cents Savings Bank, have built new additions to their facilities. The building constructed by the Salem Five Cents Savings Bank on Essex Street, designed by Oscar Padjen with graceful archways and an interior courtyard, has had a particularly positive impact on its surroundings. Other new buildings constructed in the downtown area include a new 12-story apartment building for the elderly on Liberty Street, a modern addition to the Peabody Museum overlooking East India Square and a new district courthouse on Church Street. Perhaps the most significant new building to be added to the downtown area as a result of local renewal has been One Salem Green, a five-story office building constructed in 1974. By leasing two of the five stories of the building, the city has achieved at least two goals: It has encouraged the construction of a tax-producing private office building, and it has saved itself the need to finance the construction of a new city hall, which in turn would have required abandonment of its old city hall on Washington Street.

Meanwhile, in the midst of selectively undertaken new construction, old buildings throughout the downtown area continue to be renovated and improved. In the words of Ada Louise Huxtable, "The message beginning to come out of Salem is that it is just those 'uneconomic' assets of history and style that must be used as the basis of rebuilding to achieve the kind of quality and interest that attracts the sort of money and activity that add up to the elusive creation of an attractive urban life."[7] Salem's extension of preservation to include ordinary downtown commercial buildings and its successful blending of renovation and new construction hold many lessons for Massachusetts communities. Two important insights can be derived from this brief discussion: (1) Reinvestment in existing buildings is an essential element, almost a precondition, of community renewal, and (2) New construction, if pursued judiciously with a concern for complementing existing buildings, rather than competing with or replacing them, can result in an overall renewal scheme that is aesthetically attractive, historically respectful and economically successful.



Salem's Market House and Derby Square in the 1890s and today. (top, courtesy Essex Institute; bottom, Peter Zaharis, *Salem News*)

Lowell: Changing a Liability to an Asset

Massachusetts Mills and canal in Lowell. (©Randolph Langenbach)

The city of Lowell, founded in 1822 about 30 miles north of Boston, was the nation's first great industrial city and one of a number of industrial cities—Holyoke, Lawrence, Fall River, Manchester—built in New England during the Industrial Revolution. The location of Lowell was chosen largely because of the potential to harness an enormous concentration of power created by a drop of more than 30 feet in the Merrimack River over the Pawtucket Falls. An extensive system of dams and 5.6 miles of canals were developed to distribute power to downtown sites, where scores of major textile mills were constructed. As the textile industry grew, Lowell became a major population center and attracted immigrants from many nations. In the early 20th century the textile industry moved south, leaving many abandoned buildings and high unemployment. Some of the old mills and acres of old rowhouses were torn down for urban renewal in the 1950s, and at one time serious thought was given to filling in the canals for parking. But large-scale clearance activities aimed at new construction failed to attract major private investment, so large tracts of land remained vacant in downtown Lowell.

The city of Lowell has now fully embraced a strategy of renewing itself through the renovation and reuse of its old buildings, an effort that is receiving more and more attention and support from the state and the federal government. Even with all the previous demolition, approximately 2 million square feet of excess mill space still remains in Lowell, space that could be converted to a variety of industrial, commercial and residential uses. Plans call for revitalizing the downtown shopping district through a combination of renovation and new construction and by adding public improvements (parks, lighting, signage, parking and pedestrian amenities) to encourage greater private investment in businesses and structures. Perhaps the most imaginative aspect of the Lowell recycling program is the plan to transform the city's 5 million square feet of mill space and its complete and historically significant power canal system into the Lowell National Cultural Park. This park will set an exciting precedent for developing recreational opportunities in an urban industrial context. Even more important, the park will resurrect the vestiges of a 19th-century industrial city and dramatically reinject them into contemporary commercial and social life—making preservation the vehicle for community revitalization and change.

Planning for the park, more commonly referred to as the Lowell Heritage Park, was originally initiated by the city of Lowell with financial assistance from a variety of sources; planning funds came from the National Endowment for the Arts, U.S. Department of the Interior and the New England Regional Commission, as well as from Lowell's Model Cities program. As plans matured, important state and national support was added. Most notably, more than $9 million was committed by the commonwealth of Massachusetts for establishing the Lowell Heritage State Park. The possibility of federal funding for the project has been markedly increased by congressional establishment (through P.L. 93-645) of a nine-member federal commission, the Lowell Historic Canal District Commission, headed by Massachusetts Lt. Gov. Thomas P. O'Neill, III. A major step toward implementation of the urban national cultural park concept was the selection of a team of consultants, known as the Lowell Team, a joint venture of David A. Crane and Partners/DACP, Inc.; Gelardin/Bruner/Cott, Inc.; and Michael Sand + Associates, Inc. (Gelardin/Bruner/Cott, Inc., were the architects and developers of the Piano Craft Guild described on page 51.) The Lowell Team was engaged by the Lowell Historic Canal District Commission to propose strategies for the preservation, interpretation, development and use of Lowell's historic, cultural and architectural resources. An intensive planning effort, utilizing extensive community participation, has resulted in a proposal that calls for development of the park and canal system and for adaptive use of adjacent mill structures. These activities will provide the framework for subsequent investment of local, state and federal funds.

After completing a detailed inventory of buildings and historic resources in Lowell and after analyzing the ways in which these resources can enhance community development objectives, the Lowell Team has recommended an extensive, concentrated approach for the Lowell National Cultural Park that would incorporate and extend well beyond the large-scale downtown renewal now under way. Major goals are:

"Preservation—to preserve physical elements of Lowell's environment which embody various aspects of the social and industrial revolution of the 19th century.

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"Interpretation—to explain to visitors and residents the significance of social, economic and cultural forces which interacted to create an industrial community in 19th century Lowell; how those forces evolved in Lowell and elsewhere; and how they continue to shape our daily lives.

"Development and use—to enhance the cultural, economic and physical environment of Lowell, using most efficiently the resources of all levels of government and the private sector; and to adapt historic buildings to modern use while retaining their architectural character. . . .

"Major activity centers at the Lowell Mill and at the Boott Mill will be developed at both ends of a downtown controlled zone of historic character. Re-creations of historical settings, a large trolley circulation system and a highly refined interpretive program are the major characteristics. . . .

"A major preservation effort would protect worthy downtown sites, the canal system and other unique environmental features. . . .

"Visitors would walk through a re-creation of 19th century Lowell with a bustling mixture of commerce, tourist-oriented exhibits, craft displays, barge rides, and cultural and educational programs. . . .

"At the Lowell Mill it would be expected that approximately 20,000 sq. ft. would be redeveloped as a visitor center, containing exhibits and related services. An additional 20,000 sq. ft. would be programmed with educational and cultural facilities, such as joint programs with the school system. These would support an ethnic-oriented retail and commercial cluster, all wrapped around a barge landing.

"The Boott Mill would house an exhibition describing the economic and social underpinnings of the mills, and the story of the establishment of America's first major corporation-organized city. Boarding houses, counting houses, and other sites . . . would be restored to allow adaptive reuse while encouraging visitation and interpretive tours. . . .

"The multiple, highly imageable attractions developed under this alternative would draw from 650–750,000 people/year—equal to some of the major attractions in New England. These visitors could be handled with little disruption to the city because of the efficient configuration of access, parking and circulation. The park would reinforce the existing locus of activities in downtown Lowell, and park-related environmental improvements could add significantly to the image of the area. . . . Park activities encircling the downtown should improve the economic climate and provide a strong impetus for private restoration. Although this scheme would be among the more expensive to develop, its return to the city and to the federal government per dollar spent is likely to be the greatest."[8]

Out of the darkened shells of partially occupied or abandoned mill buildings, a forgotten network of canals and a decaying central business district, the city of Lowell is fashioning a strategy for a new and prosperous future. What once were viewed as useless, outdated buildings—as if the structures themselves were the obstacles to local improvement—are being transformed through a combination of imagination and realism into a stunning asset for the rebirth of a city.

Rendering of proposed Pawtucket Canal barge loop through Francis Gate. (The Lowell Team)

South End, Boston: Using Highway Funds to Encourage Neighborhood Conservation

In many urban neighborhoods, efforts at maintaining and upgrading residential structures have been seriously hampered, if not totally negated, by highway construction that has eroded neighborhood quality. All too often, major expenditures for widening streets and improving traffic control have destroyed whatever chance old residential neighborhoods might have had to attract and keep residents and generate private property improvements.

During 1975 the Boston Redevelopment Authority hired consultants to prepare a design report on how highway transportation problems in a densely settled area might be solved while creating a more attractive neighborhood. The consultants retained were C. E. Maguire, Inc., and Childs, Bertman, Tseckares Associates, Inc., and the area chosen was the Tremont Street and Columbus Avenue neighborhood in Boston's South End.

Traffic improvements were viewed as helping to improve motor vehicle and pedestrian flow while maintaining the current volume of traffic, at the same time minimizing its negative impact on the affected residential areas. Having established this premise, the consultants began a detailed and lengthy planning process with local residents to select one of several design alternatives, each of which would maintain the current traffic volume but improve its flow. The alternatives, which were presented graphically in a variety of ways at numerous public meetings, included possibilities for: providing a landscaped median strip in the center of the highway of up to 16 feet and maintaining the present 12-foot sidewalk widths; increasing sidewalk widths to 20 feet, with no center median; compromising with a six-foot median and providing asymmetrical sidewalk widths of 18 feet and 12 feet (with the wider sidewalk on the side of the street with the most sun).

The South End Committee on Transportation, a citizens committee representing community interests in the South End, reviewed the various design alternatives and selected one as the final plan for highway and neighborhood improvements. This plan has been approved by the Boston Redevelopment Authority, the city of Boston and the Executive Office of Transportation of the commonwealth and is now awaiting funding under the U.S. Department of Transportation Urban Systems Program.

In presenting the program of recommended highway-related improvements for the Tremont Street and Columbus Avenue area, the consultants affirmed the following goals:

To revitalize and improve the environment of the street, primarily to strengthen its residential character.

To improve living conditions on the street and decrease the noise, air pollution, congestion and safety hazards caused by highway traffic.

To improve ease of movement by separating motor vehicle and pedestrian traffic flow.

To improve the pedestrian environment through wider sidewalks, plantings, street furniture, bus shelters, signage, signals and lighting.

To improve both vehicular and pedestrian safety.

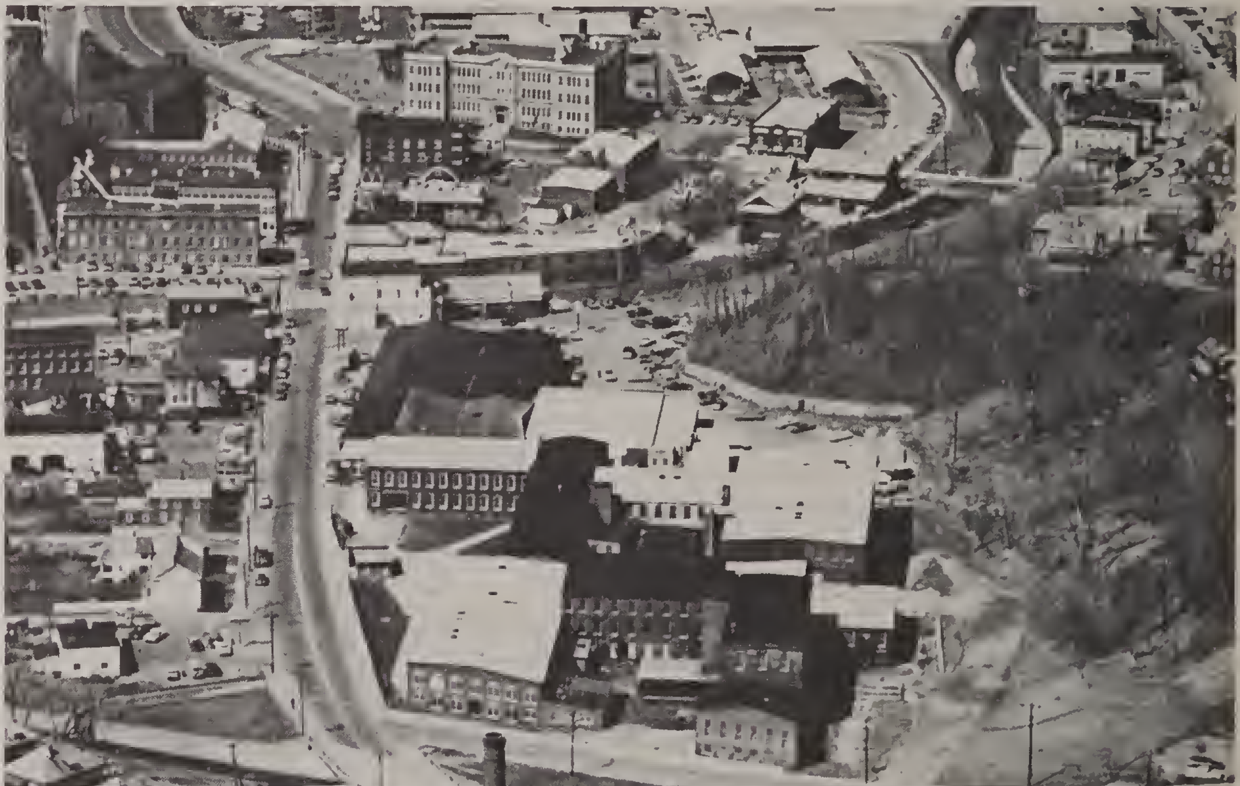
To improve street services and maintenance such as plowing, sweeping and trash collection.

One of the beneficial results of this planning process was the realization that planning for needed highway improvements can be sensitive to neighborhood needs and can, if done properly, enhance the quality of old residential neighborhoods. In fact the final report,[9] completed in August 1975, contains recommendations for a wide range of capital improvements (treatment for sidewalk areas, street corners, bus stops, crosswalks, median strips, etc.) that can contribute to neighborhood quality and qualify for federal funding from highway improvement programs such as the Urban Systems Program.

North Adams: Developing the Economy through Cultural Rejuvenation

An imaginative, multifaceted strategy for community renewal is being implemented in North Adams, a city of about 18,500 faced with limited prospects for growth and an aging downtown area clearly in need of improvement. In 1875 this industrial city was prosperous, but over the years its economic base eroded as its original industries, notably textiles, declined or moved south. In the 1970s, faced with limited prospects for growth and a 19th-century business district in need of improvement, North Adams decided that its existing buildings and businesses were important resources worth protecting.

An important application of this approach to economic development through preservation can be seen in the efforts of a private nonprofit community development corporation in North Adams, the Hoosuck Community Resources Corporation. The corporation board of directors includes local and regional leaders from business, education, industry and the arts. Among the first projects initiated by Hoosuck, in 1975, was the conversion of 150,000 square feet of surplus space in the vacant 19th-century Windsor Mill to an environmental arts center. This three-story former textile printing mill, once renovated, will provide rental space for studios, workshops and arts-related businesses for artists and artisans. The Hoosuck program also will contribute to the social and cultural rejuvenation of the entire community. With the state college system, a guild school is being established to carry out extensive training and teaching programs to transmit skills and perpetuate crafts indigenous to North Adams, and a variety of programs is planned to heighten public awareness and educate citizens about historical, industrial and artistic resources unique to North Adams and worth preserving to enhance community identity.



Providing relatively inexpensive, high-quality studio workspace and a centralized outlet for artists and

Aerial view of North Adams, with Windsor Mill in center. (Randolph Trabold, *North Adams Transcript*)

craftworkers to sell their products has not only assisted local artists but has also attracted others to North Adams. Although the businesses in the mill are small, most of the income they produce will remain in the community. Retaining and attracting creative people cannot help but contribute to a more vital and active community life. Such vitality itself can be a major attraction for other people and businesses that might consider locating in North Adams. The net effect of Hoosuck's seemingly modest project may in fact be to restore the essential pride that North Adams must have if it is to plan for the future with confidence.

The Hoosuck Community Resources Corporation is acting as developer and contractor for the Windsor Mill conversion and owns the mill under a 10-year purchase agreement. Funding for the renovation of the mill and other Hoosuck projects has been sought and obtained from a variety of sources. The diversity of the funding strategy employed by Hoosuck is indeed a key to its present success. The city of North Adams is contributing $2,000 each month for 18 months to match private contributions, and in turn Hoosuck is paying city taxes on the mill. Funds from public sources totalling $300,000 include grants from the National Endowment for the Arts and the New England Regional Commission. A low-interest, 30-year construction loan for conversion of the mill interior is being negotiated with the Ford Foundation, and Hoosuck hopes to obtain a loan guarantee from the U.S. Farmers Home Administration. The U.S. Department of Housing and Urban Development provided $381,000 for exterior renovation of the mill and for facade restoration of 10 commercial buildings in the downtown Eagle Street–Monument Square Historic District. A program to restore and maintain building exteriors is also being negotiated with merchants in the district.

The North Adams experience raises the question of what kind of new economic activity and new investment a community should try to generate. Some older cities have attempted economic revitalization by constructing new shopping complexes on land cleared through urban renewal. Yet these complexes, modelled on those that have proved successful in suburban locations, often compete with locally owned and operated small businesses. Rental space in such plazas is frequently too expensive for local merchants and instead attracts chain stores owned by corporations outside the city. A common feature of chain stores is that they tend to economize on the number of persons they employ and jobs that they offer tend to be low-paying with high turnover and few opportunities for advancement. Viewed in this context, the construction of a shopping plaza might have contributed little to the economic well-being and renewal of North Adams. Even worse, by competing with local businesses such a shopping plaza might have had a negative effect.

The question of community renewal is more complex than simply, "How do we attract new businesses and jobs?" The experience of North Adams suggests that communities, especially those with limited growth potential, need to frame the question somewhat like this: "How can we develop businesses that will truly benefit the community, that will reinvest their earnings in the community and contribute to the revitalization and enrichment of community life?"

The program of renovating and reusing the Windsor Mill, a structure identified with the city's early industrial history, is clearly a strategy designed to restore a sense of integrity and purpose to community development in North Adams. Adaptive use of the Windsor Mill is a way of bringing back a sense of historical perspective to a community that had, for a time, lost sight of its own uniqueness and value. Like the process of self-discovery and self-fulfillment, community renewal is best achieved not by rejecting the past, but by understanding it and building on it.

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[1] Ada Louise Huxtable. "Good News from the Witch of Salem," *New York Times*, August 14, 1972. [2] "Salem Restores Downtown Area," *Preservation News*, August 1975. [3] William J. Tinti, chairman, Salem Redevelopment Authority, Board of Governors. Interview with Gene Bunnell, December 17, 1976. [4] Ibid. [5] This mall, on Essex Street between Washington and Liberty Streets, is primarily for pedestrians but can be used by service vehicles and fire equipment. [6] Tinti, ibid. [7] Huxtable, *op cit.* [8] Lowell Historic Canal District Commission. *Lowell, Massachusetts: Report of the Lowell Historic Canal District Commission to the Ninety Fifth Congress of the United States of America.* (Washington, D.C.: U.S. Government Printing Office, 1977). pp. 29, 217, 220. Available for $4.15, #022-001-00070-1. [9] C. E. Maguire, Inc., and Childs, Bertman, Tseckares Associates, Inc. *Tremont Street and Columbus Street Reconstruction* (Boston: Authors, 1975). [10] Robert H. McNulty and Stephen A. Kliment. *Neighborhood Conservation* (New York: Watson-Guptill Publications, 1976), p. 167–68.

Appendix A: Preservation Resources

INFORMATION SOURCES

Federal:

Advisory Council on Historic Preservation
1522 K Street, N.W.
Suite 430
Washington, D.C. 20005

U.S. Department of Housing and Urban Development
Assistant Secretary for Community Planning and Development
Washington, D.C. 20410
(or HUD area and regional offices and state planning agencies)

U.S. General Services Administration
Historic Preservation Officer
Washington, D.C. 20405

U.S. Department of the Interior
National Park Service
Washington, D.C. 20240
  National Register of Historic Places
  National Historic Landmarks Program (National Survey of Historic Sites and Buildings)
  Historic American Buildings Survey
  Historic American Engineering Record
  Interagency Archeological Program
  Natural Landmarks Program
  National Environmental Education Landmarks Program

U.S. Department of Transportation
Assistant Secretary for Environment, Safety and Consumer Affairs
Washington, D.C. 20590

For information on other federal programs, see *A Guide to Federal Programs* and *1976 Supplement* (National Trust).

State:

State Historic Preservation Offices.
An office for each state and territory has been designated pursuant to the National Historic Preservation Act of 1966 to receive matching grants-in-aid from the National Park Service, U.S. Department of the Interior. In Massachusetts, for example, the state historic preservation office is the Massachusetts Historical Commission, Executive Director, 40 Beacon Street, Boston, Mass. 02108. A list of SHPOs is available from the National Park Service, Washington, D.C. 20240. For further information, see *A Guide to State Historic Preservation Programs* (National Trust).

Private national:

National Trust for Historic Preservation
740-748 Jackson Place, N.W.
Washington, D.C. 20006

New England Field Service Office
National Trust for Historic Preservation
141 Cambridge Street
Boston, Mass. 02144
(cosponsored with Society for the Preservation of New England Antiquities)

Addresses of other five regional and field offices available on request.

National Trust programs include advisory services, property ownership, funding programs and publications, including monthly newspaper *Preservation News*, quarterly magazine *Historic Preservation*, books and technical publications.

American Association for State and Local History
1400 Eighth Avenue South
Nashville, Tenn. 37203

American Institute of Architects
Committee on Historic Resources
1735 New York Avenue, N.W.
Washington, D.C. 20006

American Institute of Planners
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

American Society of Planning Officials
Planning Advisory Service
1313 East 60th Street
Chicago, Ill. 60637

Building Officials and Code Administrators International, Inc.
1313 East 60th Street
Chicago, Ill. 60637

Educational Facilities Laboratories
850 Third Avenue
New York, N.Y. 10022

U.S. Conference of Mayors
1620 I Street, N.W.
Washington, D.C. 20006

National Association of Housing and Redevelopment Officials
2600 Virginia Avenue, N.W.
Washington, D.C. 20037

Urban Land Institute
1200 18th Street, N.W.
Washington, D.C. 20036

Society for Industrial Archeology
c/o Room 5020
National Museum of History and Technology
Smithsonian Institution
Washington, D.C. 20560

Private state and local:

Society for the Preservation of New England Antiquities
141 Cambridge Street
Boston, Mass. 02144

To locate other organizations, contact state historical societies, state historic preservation offices, and state and local chapters of groups listed above. A list of local landmarks commissions is available from the National Trust. Reference sources include *Directory of Historical Societies and Agencies in the United States and Canada, 10th ed.* (Nashville, Tenn.: American Association for State and Local History).

FUNDING SOURCES

Federal:

U.S. Department of Agriculture
Farmers Home Administration
Washington, D.C. 20250
  Business and Industrial Loans
  Community Facility Loans
  Rural Housing Loans

U.S. Department of Commerce
Economic Development Administration
Washington, D.C. 20230
  Office of Business Development Loans and Planning Grants for Economic Development
  Office of Public Works Grants and Loans for Public Works and Development Facilities
  Office of Technical Assistance Grants

Community Services Administration
Office of Economic Development
Washington, D.C. 20506
  Special Impact Program

Federal Home Loan Bank Board
Urban Reinvestment Task Force
320 1st Street, N.W.
Washington, D.C. 20552
  Neighborhood Housing Services
  Neighborhood Preservation Projects

U.S. Department of Housing and Urban Development
Washington, D.C. 20410
  Community Development Block Grant Program
  Comprehensive Planning Assistance Program (Section 701)
  Housing Assistance Payments Program (Section 8)
  Housing for the Elderly and Handicapped Program (Section 202)
  Mortgage Insurance and Assistance for Homeowners (Section 235)
  Property Improvement Loan Program (Title I)
  Rehabilitation Loans and Grants
  Urban Homesteading Program

U.S. Department of the Interior
Washington, D.C. 20240
  National Park Service Grants-in-Aid for Historic Preservation
  Bureau of Outdoor Recreation Land and Water Conservation Fund

U.S. Department of Health, Education, and Welfare
Office of Education
Washington, D.C. 20202
  Environmental Education Grant Program
  State Library Construction Assistance Program

National Endowment for the Arts
2401 E Street, N.W.
Washington, D.C. 20506
  Architecture + Environmental Arts Program

Small Business Administration
Economic Development Division
Washington, D.C. 20416

U.S. Department of Transportation
Washington, D.C. 20590
  Federal Highway Administration Urban Systems Program
  Federal Railroad Administration Financial Assistance for Railroad Passenger Terminals

U.S. Department of Labor
Manpower Administration
200 Constitution Avenue, N.W.
Washington, D.C. 20213
  Comprehensive Employment and Training Act

Private national:

National Trust for Historic Preservation
740-748 Jackson Place, N.W.
Washington, D.C. 20006
  Consultant Service Grant Program
  National Preservation Revolving Fund

Foundations:

National, state, regional and local foundations support preservation and related activities. The Foundation Center, 888 Seventh Avenue, New York, N.Y. 10019, provides a list of regional depository libraries. See also *The Foundation Directory* (Columbia University Press, 136 South Broadway, Irvington, N.Y. 10533); *The Cultural Directory*, a guide to federal funds and services for cultural activities (Associated Councils of the Arts, 1564 Broadway, New York, N.Y. 10036).

State and local:

Grants-in-aid: Nine states, including Massachusetts, have grant-in-aid programs for preservation, primarily for nonprofit organizations and government subdivisions. The other states are Alaska, Colorado, Florida, Georgia, Kentucky, Michigan, Vermont and Texas. National Park Service grants-in-aid for historic preservation are available through state historic preservation offices.

Housing authorities: The Massachusetts Housing Finance Agency and similar agencies in other states, including California, and local authorities encourage recycling through loan programs, subsidies and limited-profit development corporations.

For complete information on state preservation funding programs, contact state historic preservation offices and see *A Guide to State Historic Preservation Programs* (National Trust).

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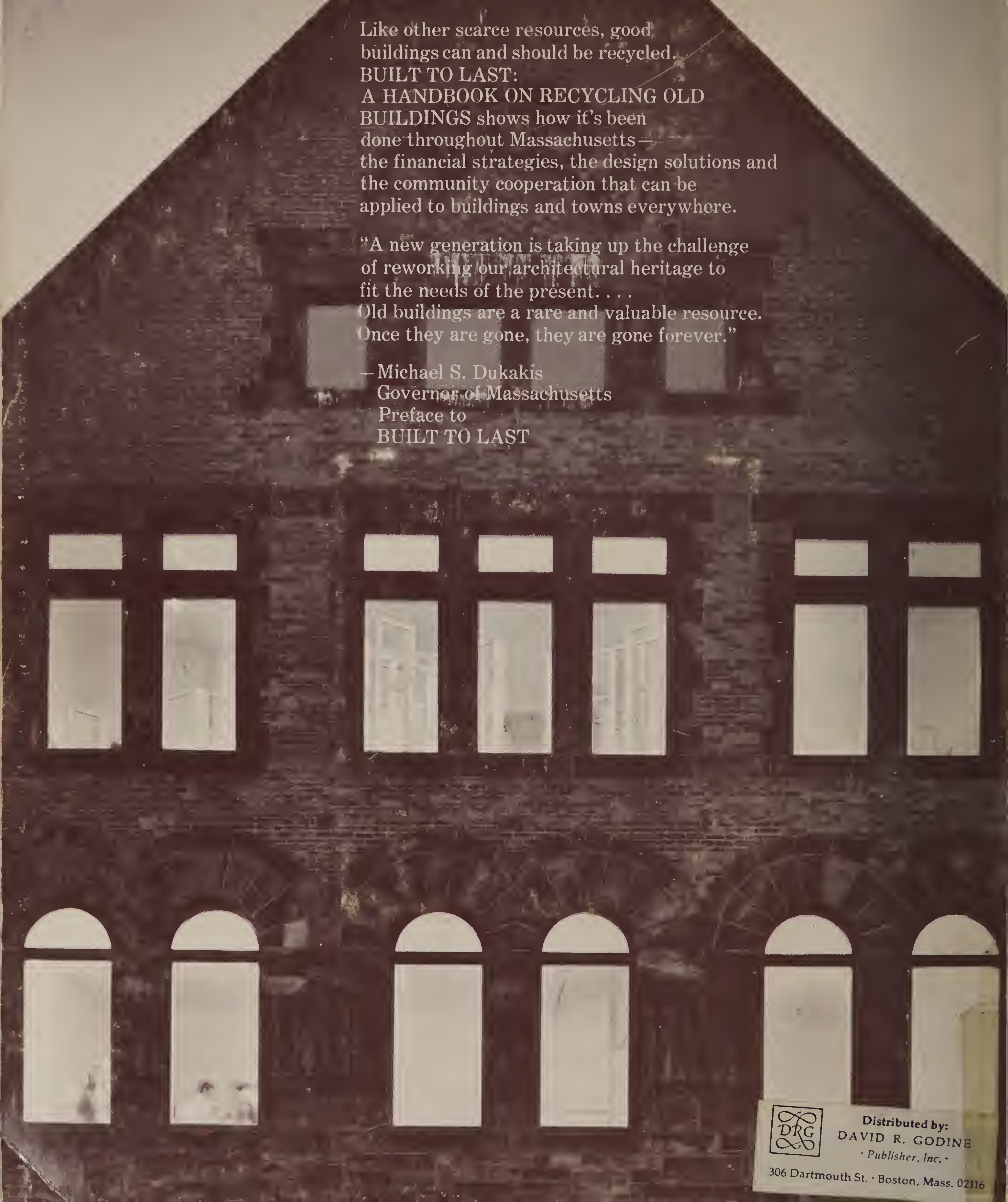

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